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A CASE OF ILIOFEMORAL ANEURYSM EXEMPLIFYING THE VALUE OF THE PRELIMINARY PARTIAL OCCLUSION OF AN ARTERY IN THE TREATMENT OF ANEURYSM

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Excision of an iliofemoral aneurysm three weeks after preliminary partial occlusion of the external iliac artery.—Surgical No. 31928. W. C., colored man, aged 40, admitted to the Johns Hopkins Hospital April 10, 1913. Eleven months before admission, patient noticed a dull pain on stooping and found a small, pulsating lump in the left groin which has steadily increased in size. Five months ago the limb began to swell.

Examination.—The patient is a tall, muscular, robust negro. The thorax is negative except for a systolic blow over lower left interscapular region. Superficial blood-vessels are sclerotic. Blood-pressure is 130. The abdomen is distended; there are tortuous superficial veins over left abdomen, and edema of the skin to the level of the twelfth rib. Over the aorta, which seems unusually large, a distinct bruit is heard. The left leg is enormously swollen from groin to toe, and so hard that even on forcible pressure there is barely a suggestion of pitting. The entire thigh seems to throb with each pulsation, and the skin of the whole extremity is very much darker than on the opposite side. In the region of the groin is a great pulsating expansile swelling which extends from near the symphysis pubis to the anterior superior spine of the ilium, and from a line joining the iliac spines of the two sides to a point about 10 cm. below Poupart's ligament. The precise outlines of the aneurysm cannot be determined, on account of the great swelling all about it, except above, where it terminates quite abruptly. A thrill is felt over the tumor and a bruit can be heard from the abdominal aorta down to a point about 15 cm. below Poupart's ligament.

The measurements of the extremities are as follows:

	Right	Left
	cm.	cm.
Thigh at level of gluteal fold.....	48.5	63
Knee, across patella.....	33.5	45
Calf of leg, 15 cm. below knee-joint...	31.5	40.5
Ankle, 2 cm. above internal malleolus..	20	26.5

Wassermann is positive.

Believing that the danger of gangrene in this case would be unusually great either from ligation of the external iliac artery, from excision of the sac, or from the Matas endoaneurysmorrhaphy, indeed, from any method which would suddenly cure the aneurysm, except possibly vessel transplantation, I decided to make a preliminary partial occlusion of the external iliac artery.

First Operation.—Partial occlusion of the left external iliac artery with an aluminum band. May 21, 1913: The artery was readily found. It was abnormally large, very deeply situated and ran from behind forward instead of from above downward. The vessel was freed with two long blunt dissectors and lifted from its bed with two tapes, between which the aluminum band was curled about it. With the thumb and finger the band was rolled (tightened) until a thrill could be distinctly felt in the artery below it. The band was again rolled—tight enough this time to obliterate the thrill in the artery and the pulsation in the aneurysm. A very faint, hardly perceptible pulse could still be felt in the external iliac artery between the band and the aneurysm. Thus the vessel had been occluded to precisely the desired amount. The foot immediately became quite cold. Had the artery been totally occluded gangrene might have resulted.

After closure of the wound a faint bruit, now confined to an area not over 4 cm. in diameter, could be heard just below Poupart's ligament. There was no appreciable pulsation in the aneurysm.

May 22 (twenty-four hours after operation): Circulation in foot has improved. Patient can move toes and ankle freely. He has had some pain in the leg. During the night the toes were numb and insensitive to touch.

May 23: The swelling of the limb has decreased. The thrill extends higher over the aneurysm and along the course of the external iliac artery than before the operation. The band is probably responsible for this.

I may remark here that the thrill has been an important guide to us in the conduction of our experimental and clinical work, for it indicates quite accurately the degree of constriction which has been attained. In the histories of our experiments we read, "Artery has been constricted to the thrill-point," or "thrill-points passed but pulse perceptible," or "thrill and pulse obliterated but lumen of vessel not completely closed."

May 25: Patient is free from pain. Sensation and temperature of the limb are normal. A previously much-dilated tributary to the long saphenous vein is no longer visible. There is a suspicion of pulsation in the aneurysm.

June 6: The swelling of the limb has steadily decreased since the operation. There is a very faint but definite pulsation in the aneurysm.

Second Operation.—Excision of the aneurysm. June 7: The skin having been disinfected with alcohol and tincture of iodin, the entire field of operation including scrotum, penis, abdomen, gluteal region and anterior surface and sides of thigh were covered with a layer of very thin linen soaked in celloidin. A long vertical incision was made through the dried celloidin and linen over the greatest convexity of the aneurysm. Before resorting to temporary occlusion of the common iliac artery an attempt was made to enucleate the sac to the extent which might prove feasible (1) in the hope that it might be unnecessary to complicate the operation by the dissection of the common iliac and (2) because I wished to note the condition of the circulation in the anastomotic vessels as well as in the femoral vein and artery. The tissues over and about the aneurysm seemed to be abnormally vascular, many more clamps than usual being required to control the bleeding. Two large, flattened and

apparently obliterated veins lay over the inner part of the sac. The epigastric and external iliac vessels had been dissected out and tied, and the enucleation of the sac, above and at the sides, bloodlessly executed, when I decided that much time would be saved by making temporary compression of the common iliac. This vessel was exposed by cutting upward over the left rectus muscle in the line of the scar of the original incision. A broad tape was wound twice around the common iliac, twisted until the artery was occluded, and the twist maintained by a clamp.

The aneurysm was found to terminate below in a broad funnel from the inner and posterior side of which a large artery, presumably the profunda, was given off. Just below the funnel-shaped dilatation of the femoral, this artery was divided between two ligatures and the sac dissected out from below upward. A cord-like structure, later supposed to be the femoral vein, was cut across and dissected up with the sac. The external iliac artery, without change in its size, plunged abruptly into the sac at the upper part of its posterior surface. The aneurysm was then split longitudinally from one end to the other and the clots rapidly evacuated. The wall was perfectly dry, not a single bleeding point being seen. The sac was found to extend deeply into the pelvis. It, undoubtedly, had pressed on the internal iliac vessels and their branches. The further liberation of the sac was very easily and swiftly carried out, not a single vessel being divided except by the final stroke of the knife which severed the proximal end of the external iliac vein. This vessel having been occluded and cut through in its peripheral part was not definitely identified until redivided. Altogether the operation was carried out in a bloodless manner.

The sutured wound was 45 cm. in length. It was closed without drainage except for one short cigaret of gutta-percha tissue. A silver-foil dressing was applied. After the operation the left foot and leg up to the knee were distinctly cooler than the right. A difference in the temperature of the two legs was observable until the fifth day.

On recovery from the anesthesia the patient could move the toes and ankle freely. He stated that his foot felt numb, but he could locate accurately pin-pricks at every point except along the inner margin of the nail of the great toe, and could readily distinguish heat from cold.

June 11: First dressing. Wound healed throughout by first intention except for the drainage opening. Patient has been remarkably comfortable, requiring no morphin since the operation. The swelling throughout the entire limb has greatly decreased. There has been no distention of the abdomen, notwithstanding the transperitoneal exposure of the common iliac artery.

July 16 (nine days after operation): Patient has been walking about for several days. He states that his leg is absolutely comfortable and rapidly gaining in strength. The entire limb is soft and quite natural. The circumference of the thigh measures 11 cm. less than before operation. Elsewhere the swelling has decreased proportionately.

November, 1913: Patient writes enthusiastically of his present condition. He states that he observes no sign of swelling or loss of power or sensation in the left leg, and that he is able to do a hard day's work without unusual fatigue.

I have cited this case at such length because it seems to me to demonstrate quite convincingly that the employment of the metal band was not without avail. One might well perhaps allow a longer time for the establishment of the collateral circulation, but in this instance it was not possible to do so as I was to sail for Europe two days after the second operation.

1201 Eutaw Place.

A Simple Equation.—If manure breeds flies and flies kill babies, what does the man do who maintains the manure pile on his premises?—*Bull. Chicago School Sanit. Instr.*

THE ABSORPTION OF EPINEPHRIN FROM THE NASAL SUBMUCOSA*

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Dr. W. B. Chamberlain called attention to the unusually pronounced vascular effects occasionally obtained from the injection of epinephrin and cocain into the nasal submucosa in nasal operations. After the application of cocain and epinephrin to the mucosa to render the parts anesthetic and anemic, one or two tablets of novocain, 1/6 grain, and epinephrin, 1/100 grain, dissolved in 5 c.c. of water are injected into the submucous tissue. The observations noted were cardiac irregularity with occasional decrease in the pulse-rate to 40 or 50 per minute; the blood-pressure was not determined. These phenomena suggested that the nasal submucosa must be an unusually good absorbing surface, since neither epinephrin nor cocain produces these marked effects on hypodermic or even intramuscular injection. Since this is of both practical and scientific interest, I have here confirmed it, at the suggestion of Sollmann, in the following manner:

METHODS

The epinephrin was injected into the submucosa of the nasal septum and anterior turbinals of fifteen dogs under anesthesia; the blood-pressure was recorded from the carotid artery. The usual dose of the drug was 1/20 c.c. of the 1:1,000 solution per kilogram of animal; sometimes a little more or less was given. About forty injections were made. Inasmuch as the turbinals in dogs are quite prominent, the injections were made into the anterior part of the septum and turbinals only, and at times somewhat blindly; but as the vascular effect of the injections was obtained so frequently, a more elaborate technic was thought to be unnecessary.

THE VASCULAR EFFECT

Following about one-half of the injections (twenty-one of about forty), there was a striking rise in blood-pressure; the mean rise in all injections was 50 mm. of mercury, with extremes of 10 and 160 mm. (see tracing). In three experiments the maximal pressure attained was over 200 mm. (265, 238, 215 mm.). The pressure may rise quite promptly, reaching the maximal level in not more than thirty seconds and returning to the normal level within from two to four minutes. This effect is practically the same as that obtained from the rapid intravenous administration. In a somewhat larger number of experiments the pressure rose more gradually, attaining a lower maximum in one or two minutes, remaining at this level briefly and gradually falling to the normal; in one experiment the normal level was not reached until nine minutes after the injection.

The vascular effect seems to depend somewhat on the pressure exerted in injecting the solution. When considerable pressure is required to introduce the epinephrin, a greater vascular reaction is usually obtained, that is, the effect more closely approaches that following an intravenous injection with its sudden marked rise in pressure of short duration. This was not a constant occurrence, however.

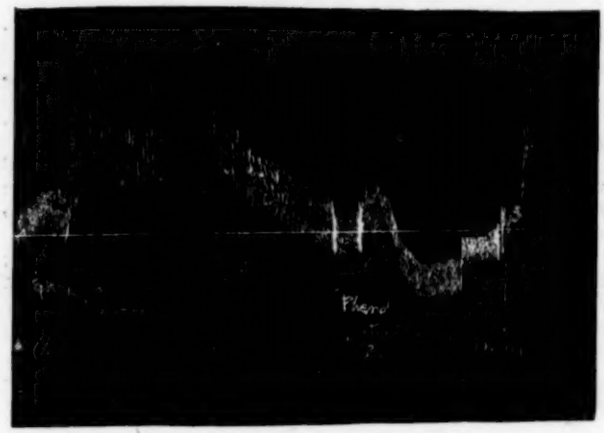
The epinephrin was given at all levels of blood-pressure (from 30 to 170 mm.). Attention should be

* From the Pharmacological Laboratory of the Western Reserve University Medical Department.

directed to the marked reaction which may be obtained at very low pressures: in one experiment, on the injection of 1/15 c.c. per kilogram of epinephrin, the pressure rose from 30 to 190 mm., which was the maximum rise attained in any experiment.

DISCUSSION

1. These experiments show that the submucosa of the nasal passages forms an excellent absorbing surface, at least for epinephrin, and probably therefore for other drugs. The effects often approach and sometimes parallel those produced by rapid intravenous injection. Evidently this phenomenon is a result of the very great vascularity of the region, the injected material at times passing directly into the venous circulation, as was shown in the following manner: Injections of carmin gelatin were made into the turbinals and septa of several dogs either shortly before or after death. Microscopic examination of sections of these parts shows portions of the injected mass in the lumen of the veins, not only at the site of injection, but also at some distance from it. The great vascularity of the region is well illustrated by the sections.



Carotid blood-pressure tracing to compare the effect of epinephrin administration by vein and into the nasal submucosa, and to illustrate the result of the rise in blood from the nasal injection on a heart weakened by phenol.
1. Epinephrin 1/20 mg. per kilogram (1/20 c.c. of a 1 : 1000 solution) by vein.
2. Phenol 50 mg. per kilogram by vein.
3. Epinephrin 1/20 mg. per kilogram into nasal submucosa.
(The submucous injection gave almost the same rise in blood-pressure as the intravenous injection; at the height of the curve the heart, weakened by the phenol, dilated and stopped, unable to resist the increased tension in the arterial system.

2. The administration of epinephrin in this manner clinically could possibly be of serious moment. In persons in whom a sudden rise of blood-pressure is especially contra-indicated—those with cardiovascular disease, arteriosclerosis, etc. — the nasal submucous injection of epinephrin could well be of serious moment. While the danger of the administration of epinephrin to persons with arteriosclerosis should be borne in mind, it is also true that arteriosclerosis occurs later in life, when nasal operations are less frequent. Of course, the quantities used in nasal work are much smaller than those used in these experiments; in susceptible persons, however, enough epinephrin could be absorbed to effect a serious rise in blood-pressure. A case in point was met in this series: A dog had received a non-fatal dose of phenol (carbolic acid) intravenously; this was followed in a few minutes by a nasal submucous injection of epinephrin. The blood-pressure rose rapidly, and when the maximum level was reached, the heart dilated and the animal could not be recovered; the heart weakened by the phenol, could not resist the high pressure of the epinephrin (see tracing).

The effects of the cocain would doubtless also be exaggerated by the method of administration. I am not prepared to say how much of the effects observed in the clinical cases mentioned in the introduction is due to each of these drugs.

3. In conditions of circulatory collapse necessitating rapid stimulation, it would seem that the injection of epinephrin into the submucosa of the nasal septum or turbinals could well be of much value. The technic is simple, and the quantity of the drug readily controlled. This method is of course not as satisfactory as the intravenous method when the latter is feasible, which is not often the case, however, in cases of sudden failure of the heart. The method would require considerable caution in view of the fatal result mentioned above.

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HEREDITARY GLAUCOMA (SIMPLEX)

THE REPORT, WITH OPERATIVE NOTES, OF THREE GENERATIONS OF ONE FAMILY *

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Heredity is recognized as a common factor in the causation of glaucoma, both of the inflammatory and non-inflammatory types. As a hereditary type glaucoma simplex is exceptionally rare beyond the second generation, and in my exhaustive search I have been able to find recorded only four other cases or families. The earliest cases are mentioned by Benedict in his publication in 1842; von Graefe in 1869 mentioned the importance of heredity in the causation of glaucoma, although no specific cases were given. Much literature is found on the direct inheritance of glaucoma of the acute or inflammatory type and special mention should be given Harlan's family, where members of five generations were afflicted. The discussion of this type of glaucoma is purposely omitted from this monograph. Lawford's very excellent review of the subject in 1907 in his report of "Examples of Hereditary Primary Glaucoma," has been kindly placed in my hands by the author and I have taken the liberty of quoting freely from the text and of copying his pedigrees.

I have had an unusual opportunity to study clinically this type of glaucoma in a family in which I found no peculiarities, common ailments (other than malaria and glaucoma) or serious illness, and in which eight members are blind or going blind from this mysterious disease. "Anticipation," so prominently mentioned by von Graefe and Lawford, is as prominently displayed in the family of which I present an account.

* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* On account of lack of space this paper has been abbreviated for THE JOURNAL. It will appear in full in the Transactions of the Sections and in the author's reprints.

* Much confusion exists in the selection of titles given papers on the subject of glaucoma and no index could properly classify them. It would be most simple to adhere to the old classification, namely, primary glaucoma, including the acute and chronic inflammatory types; glaucoma simplex, the non-inflammatory type, and secondary glaucoma.

REPORT OF CASES

CASE 1.—This interesting family commences with W. F. H., aged 59, seen by request March 3, 1911. He states positively that his father and mother and other near relatives whom he knew had good sight. The patient always enjoyed good health, having worked on a railroad and farm all of his life. When 29 years of age he was struck in the right eye with a twig, and soon afterward discovered that he could not see well with the left eye. He consulted a competent ophthalmologist six months later, who told him that he had glaucoma in each eye. An iridectomy was made in the left eye, and later the right eye was enucleated on account of pain. Since then

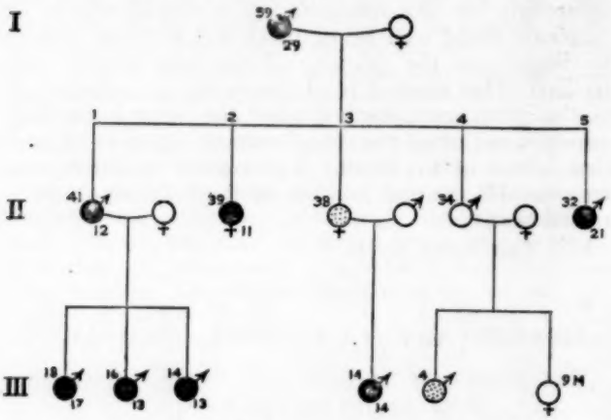

Fig. 1.—Pedigree of author's patient. Explanation of signs employed in this and the following pedigrees: ♂ male; ♀ female; the same characters in black indicate affected persons; the dotted characters persons with amblyopia and doubtful glaucoma. The numbers above each individual indicate the present age; below, the age when bad sight was first detected. Generations are indicated by Roman numerals, I, II, III, etc.

he has been able to do his work in a moderate way, although his sight gradually failed until now he is almost blind. Examination: Left eye, cystoid cicatrix in region of old sclera incision. Pupil widely dilated; grey atrophic iris, media clear and marked cupping of vessels, with their caliber much reduced; nerve bluish white. Horizontal diameter of the cornea, 12 mm. Tension + 2. Light perception only.

CASE 2.—Mrs. S. C. G., aged 41, seen by request July, 1912. Her past history has been good, pneumonia her only serious illness. She first noticed defective sight in the right eye at 12, and later her sight became so bad that she stumbled over chairs and other objects about the house. She never saw halos around lights or had pain in the eyes. At 15 an iridectomy was made on the right eye and soon afterward on the left. She states that the operations have not benefited her. Examination: right eye, vision 0; ciliary staphyloma in the region of old scleral wound; tension +3; horizontal diameter of cornea 11 mm.; iris drawn up in staphyloma; good black pupil and media clear; bluish-white nerve with marked excavation; vessels thread-like; external squint 15°. Left eye, vision 5/200 unimproved; tension +1; corneal diameter 11 mm.; anterior chamber very deep; media clear; atrophic nerve with excavation; vessels small. Color of irises brown. Three months later: Tonometer, right, 11 mm. Hg; left, 16 mm. Hg. Refraction, left, —3 S. She complains that when "bilious" she sees spangles of light; staphyloma more prominent, which accounts for low tension.

CASE 3.—D. G., first son of Patient 2, aged 18, was seen Aug. 16, 1909. His health has always been good and six weeks before visit he discovered that while out hunting he could not see well with the right eye; thinks it has been growing worse since. There has been some deep pain in the eye. Examination: Right eye 20/100 unimproved; anterior chamber deep; peculiar physiologic cupping, with a serpentine twist of vessels over the nerve, which at its center dips slightly; field, slight contraction nasally; tension (digital) normal. Left eye, vision 20/20 unimproved, but reads best at normal distance with +1.25 S; eye apparently normal; field normal. Irises brown; diameter of corneas 11.5 mm. The patient passed from notice until Feb. 10, 1911. Vision, right 20/70; vision, left 20/50. Field, marked contraction nasally; tension each eye +1. (For chart of vision and tension see Fig. 2.)

February 21: LaGrange sclerectomy with broad iridectomy right eye. Patient was allowed to go home immediately. Ultimate result satisfactory. March 15: Vision, right, $20/200 - 1 \bigcirc - 1 \times 90 = 20/70$; tertian malaria.

March 16: Iridectomy (left) section made with thin knife. Patient allowed to leave. Healing uneventful. Gave physostigmin (eserin) to use constantly.

November 17: Vision, right, 3/200; left, 18/200; tension + 1.

June 24: Vision, right, 20/200; left, 12/200; tonometer, right, 65 mm. Hg; left, 32 mm. Hg (physostigmin).

July 2: No miotic, tonometer, right, 69 mm. Hg; left, 38 mm. Hg; fundus, each eye, marked cupping with atrophic nerves. Has developed tuberculosis and has been sent to county sanatorium.

November 4: Right, $2/200 - 1.50 \bigcirc - 0.50 \times 60 = 20/200$; left, $20/200 - 1.25 \bigcirc - 1.50 \times 165 = 20/70$; tonometer, right, 75 mm. Hg; left, 60 mm. Hg (no miotic). Chambers very deep. Atrophic nerves, with cupping. Calls green light blue; left field much contracted, health much better.

Jan. 2, 1913: Tonometer, right, 70 mm. Hg; left, 40 mm. Hg. Operation; right eye, scleral trephine.

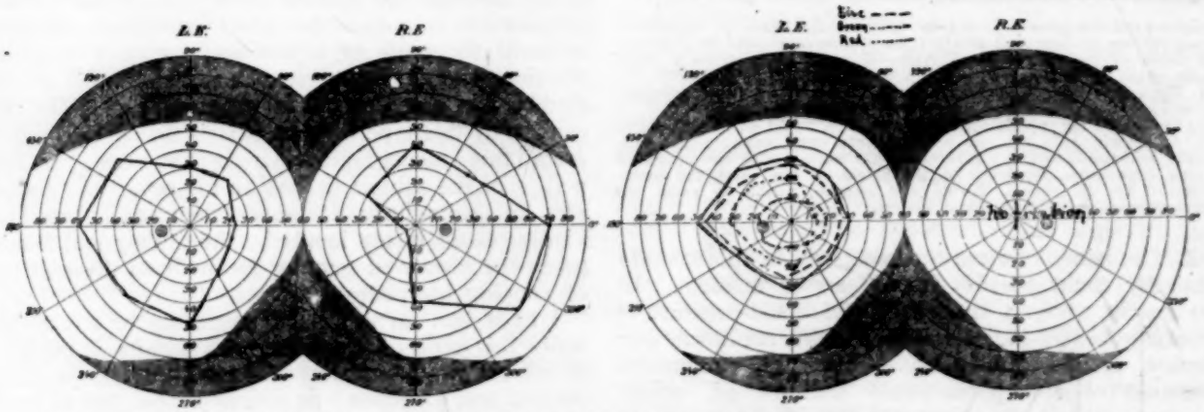

Fig. 3.—Field of vision in Case 3, taken Sept. 11, 1911, and Nov. 3, 1912. Confusion of colors indicated by crossing of colors.

January 3: Chamber restored.

January 4: Eye quiet.

January 17: Tonometer, right, 15 mm. Hg; left, 33 mm. Hg.

February 7: Right 6/200, unimproved; left, $20/200 - 1.25 \bigcirc + 2 \times 165 = 20/70$; tonometer, right, 20 mm. Hg; left, 37 mm. Hg (physostigmin).

April 17: Tonometer, right, 8 mm. Hg; left, 44 mm. (physostigmin).

April 18: Right, 5/200; left 15/200; with glass = 20/100.

June 6: Operation: Left, scleral trephine.

June 7: Chamber restored.

June 9: Comfortable.

June 23: Tonometer, right, 11 mm. Hg; left, 23 mm. Hg (physostigmin).

July 1: Tonometer, right, 7 mm. Hg; left, 25 mm. Hg.

July 22: Tonometer, right, 7 mm. Hg; left, 27 mm. Hg.

Jan. 5, 1914: Vision, right, 4/200; left, 20/100, unimproved; tonometer, right, 14 mm. Hg; left, 7 mm. Hg; good filtration scars.

CASE 4.—E. G., second son of Patient 2, aged 16, was first seen Jan. 2, 1912. His health has always been good, but sight has been failing three months; no other symptom of eye trouble is present. Examination: Right eye, vision 20/50 unimproved; anterior chamber deep; fundus normal; tension +1; field, slightly contracted for form, markedly for colors. Left eye, 20/50 unimproved; rest of examination same as right; field more contracted. Irises brown, diameter of cornea 11.5 mm.

February 16: Iridectomy (right) section made with knife; patient allowed to leave operating-room for home.

February 16: Anterior chamber unrestored.

February 17: Chamber slowly restoring.

March 7: Vision, right, 20/70 + 0.50 × 45 = 20/50; tension (digital) normal. Vision, left, 20/40 (physostigmin). (Vision and tension shown in Fig. 4).

March 8: La Grange operation (left); patient allowed to go home.

March 10: Chamber unrestored.

March 11: Chamber slowly restoring.

June 17: Right eye, 20/100. Left eye, 20/70.

July 5: Tonometer, right, 53 mm. Hg; left, 34 mm. Hg; vision, right, 20/70; left, 20/50 using physostigmin one month.

December 11: Chemosis.

December 18: Eye quiet.

December 28: Eye white.

Jan. 3, 1914: Right, 20/70 — 50 ⌒ + 1.50 × 30 = 20/30. Left, 20/40 + 0.75 × 165 = 20/15. Tonometer, right, 52 mm. Hg; left, 36 mm. Hg. No filtration scar in right eye. Operation advised.

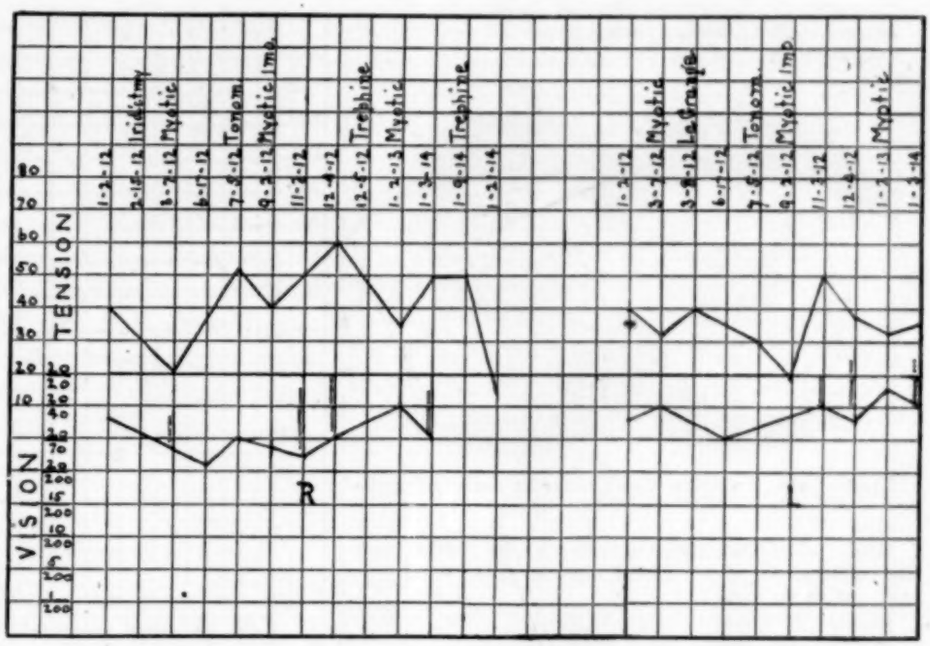

Fig. 4.—Vision and tension in Case 4. Dotted lines indicate improvement with glasses.

January 9: Operation: Scleral trephine right eye, corresponding to 1 o'clock on watch dial. Not perfectly done on account of scar tissue of former operations, although good button of sclera removed.

January 21: Tonometer, right, 13 mm. Hg; good filtration scar and eye very quiet.

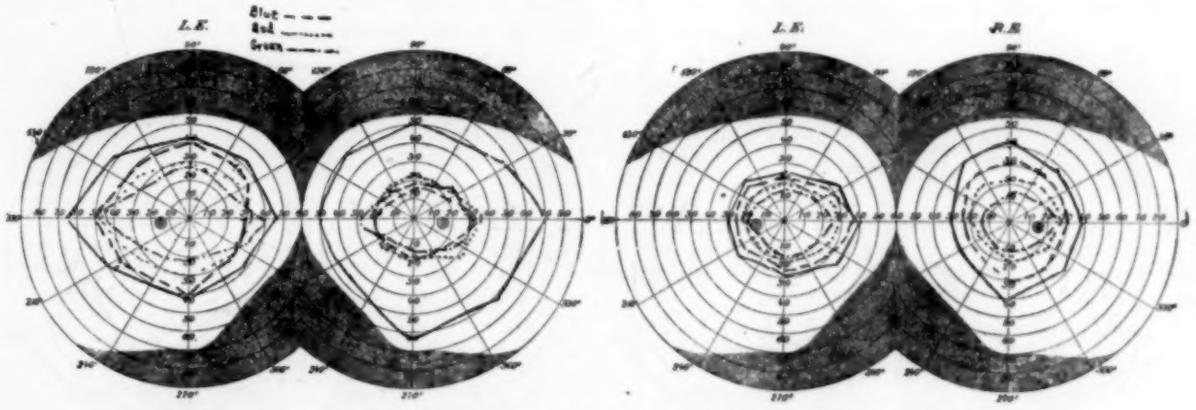

Fig. 5.—Fields of vision in Case 4, first taken Jan. 2, 1912, before miotic and later, after use of miotic.

September 2: Tonometer, right, 40 mm. Hg; left, 18 mm. Hg (physostigmin).

November 3: Right, 20/100 — 1 × 120 = 20/30; left, 20/40 + 0.50 ⌒ — 1 × 75 = 20/20; field very contracted. Tonometer, right and left, 50 mm. Hg.

December 4: Right, 20/70 + 0.50 ⌒ — 1.50 × 105 = 20/20; left, 20/50 — 1 × 75 = 20/15; tonometer, right, 60 mm. Hg; left, 38 mm. Hg.

December 5: Operation: Right, scleral trephine; large conjunctival flap containing much scar-tissue. Trephine not a perfect one, although good scleral button removed.

December 6: Chamber restored.

CASE 5.—B. G., aged 13, third son of Patient 2, seen March 1, 1911. His health is good; sight has been failing for some months. Examination: Right, 20/50 unimproved. Tension normal, rigidity of sclera; field contracted for form, great confusion of colors; fundus normal, except pale nerve; anterior chamber deep. Left, 20/70 unimproved. Tension +1; field very contracted and great confusion of colors. Diameter of cornea, right, 11.5 mm.; left, 12 mm.; irises light brown. Gave physostigmin.

September 16: Vision, right, 20/40; vision, left, 20/50; tension same. (Vision and tension shown in Fig. 7.)

September 2: Developed tuberculosis.

December 16: Right, 20/40 + 37 × 15 = 20/30; left, 20/40 + 0.50 × 105 = 20/40. Chambers appear of normal depths. Tonometer, right, 35 mm. Hg; left, 40 mm. Hg. Fundus, right, pallor to temporal half of disk, pulsation of large vein; left, decided pallor to temporal half of disk with atrophic chorioid adjoining temporal side of disk.

December 19: Operation: left, scleral trephine with iridectomy. Allowed to go home.

December 23: Unrestored chamber; pain in eye.

December 24: Chamber restored.

December 28: Eye quiet.

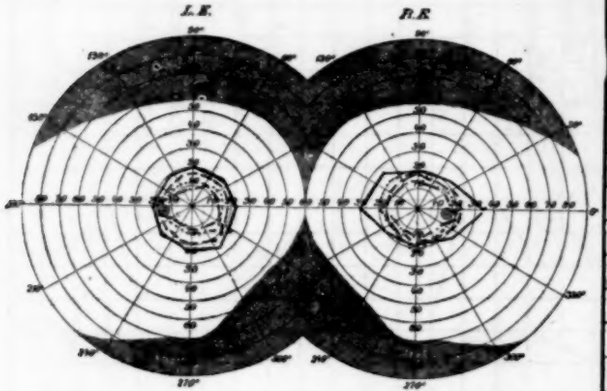

Fig. 6.—Fields of vision in Case 4 nearly 12 months later. No miotics, and great contraction for form.

January 2: Tonometer, right, 40 mm. Hg; left, 14 mm. Hg. Operation: right, scleral trephine with iridectomy. Allowed to go home.

January 7: Chamber restored slowly.

January 17: Right, 20/30 + 25 × 45 = 20/20; left, 20/40 + 50 × 15 = 20/30.

March 12: Tonometer, right, 15 mm. Hg; left, 18 mm. Hg. Scope, one vessel, cupping in right disk. Good filtration scars.

January 2: Right, 20/40 + 0.50 × 90 = 20/40; left, 20/50 — 50 × 180 = 20/50. Tonometer, right, 14 mm. Hg; left, 23 mm. Hg; flat filtration scars; fundus, no change; condition satisfactory.

CASE 6.—P. H., aged 39, sister of patient in Case 2. Past history unimportant, malaria several times. Attention called to eyes at 11 years of age on account of inability to read well. Always saw "rings" around lights. Left eye inflamed at 3 years of age and has never been able to see. At the age of 12, right eye operated on and sight since has been good. Examination: Right, 20/70, unimproved. Tension: Tonometer, 17 mm. Hg; chamber deep; scope optic atrophy; little cupping; vessels of normal caliber. Good broad base iridectomy. Field very contracted. Left aphakic eye. Iridodonesis, optic atrophy, cupping of vessels. Diameter of cornea, 11 mm.; blue irises.

CASE 7.—L. S., aged 14, came to the clinic to have his eyes examined, March 3, 1911, as all of his cousins and most of his family had bad sight. He was unaware that his sight was defective. He too, like other members of this series, had malaria. Examination: Right, 20/70, very deep chamber; fundus normal; hyperopia 2 D; field, some peripheral contraction. Left, 20/20, deep chamber; fundus, normal; field, some contraction; hyperopia, 1 D. Blue irises, tension normal (digital) but rigid sclera; diameter of corneas 12 mm. I did not consider that he had glaucoma, but he was directed to return for further observations.

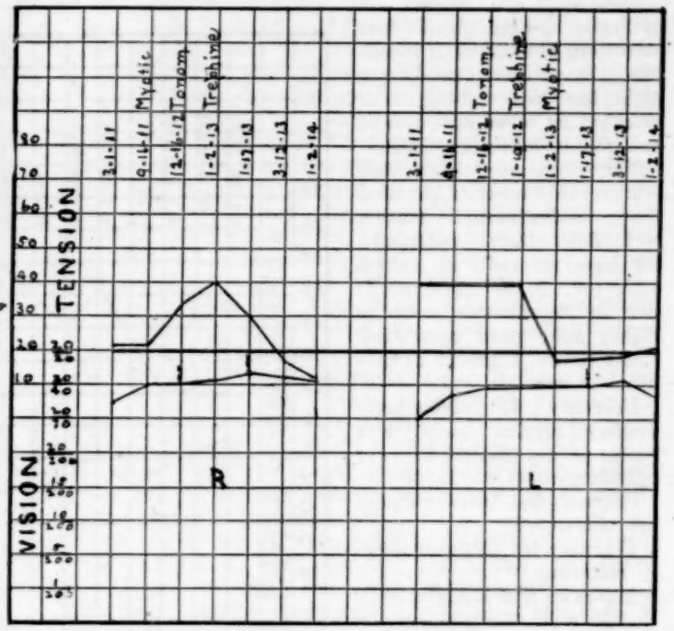

Fig. 7.—Vision and tension in Case 5. Dotted lines indicate improvement with glasses.

February 12: Right, 20/70; left, 20/40; fields, decided narrowing with great confusion of colors, so much so that accurate charts could not be made. Patient given physostigmin.

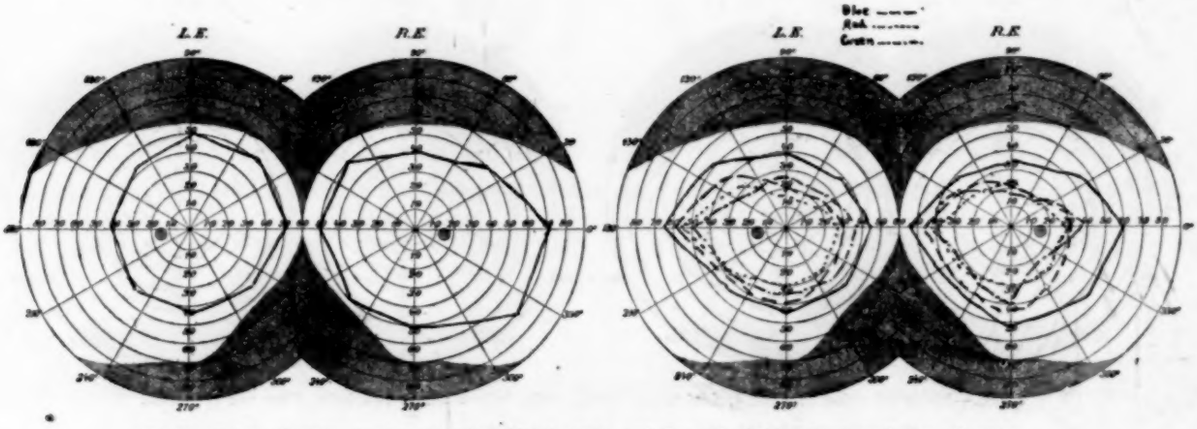

Fig. 8.—Fields of vision in Case 5, taken March, 1911, and Dec. 17, 1912. Great confusion of colors.

March 1, 1912: Right, 20/50; left, 20/30; Tension normal March 15, fields, decided contraction in right eye. (Fig. 9.)

March 28: Operation: Right, LaGrange sclerectomy with iridectomy. Allowed to return home.

March 29: Chamber restored, very deep.

May 20: No physostigmin, right, 20/70; left, 20/30.

November 3: Fundus, each eye, vessels normal, pale nerves, tonometer with difficulty, 27 mm. Hg; fields normal, Right, 20/70 — 1.50 S = 20/30; left, 20/20 — 0.50 × 90 = 20/20; patient lost sight of for several months.

Jan. 3, 1914: Right, 20/200 — 1.50 S = 20/30; left, 20/30 + 50 × 90 = 20/30. Tonometer: right, 15 mm. Hg; left, 25 mm. Hg. Field, left decided contraction for red and green. Fundus right, slightly pale nerve, left normal. Anterior chamber very deep and the light reflex on the cornea appears like that in keratoconus. Even now I am not positive that this patient has glaucoma, but with a variable vision, a contracted field for form and colors, and with the unquestionable family history, he should be regarded as "suspicious." I believe the sclerectomy performed has been of help.

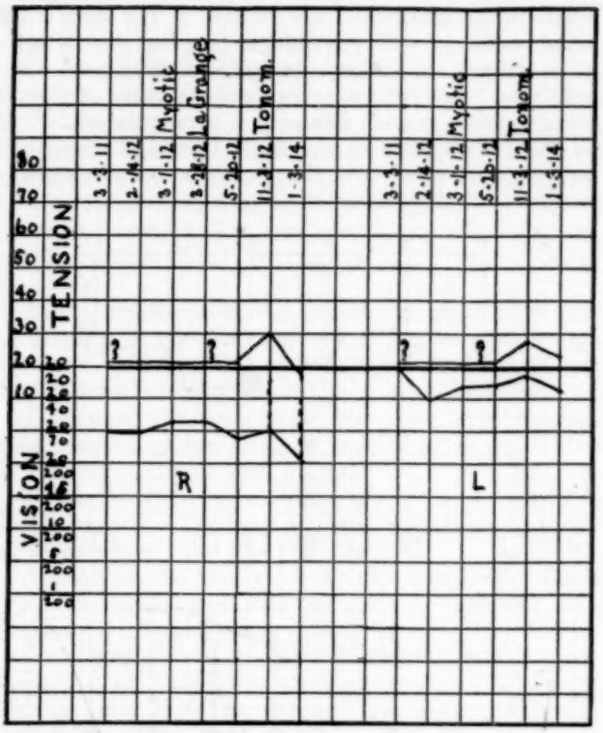

Fig. 9.—Vision and tension in Case 7. Dotted lines indicate improvement with glasses.

CASE 8.—C. R. H., aged 23, brother of Patients 2 and 3. His past history is negative. Five months before the first visit, Feb. 5, 1909, he noticed that his sight was failing. Examination: Right, light perception; atrophic nerve; contracted vessels and marked cupping; chamber very deep. Tension +2. Left, 20/70, deep chamber; atrophic nerve; cupping of vessels, which were moderately contracted. Tension + 1; field, marked contraction of nasal half. Brown irises, diameter of corneas 12 mm. Hg. Gave physostigmin.

December 8 to 10: Seen for the first time in several months. Has been using drops almost continually. Right, peripheral vision only. Left, 10/200. Operation: Right eye, LaGrange sclerectomy, with iridectomy. Chamber not restored for four days. Kept in hospital bed, very quiet. Result very good at dismissal.

Feb. 2, 1911: Tension, normal right (digital). (Vision and tension shown in Fig. 11.)

February 10: Operation: Left iridectomy; allowed to leave hospital. Chamber restored in two days.

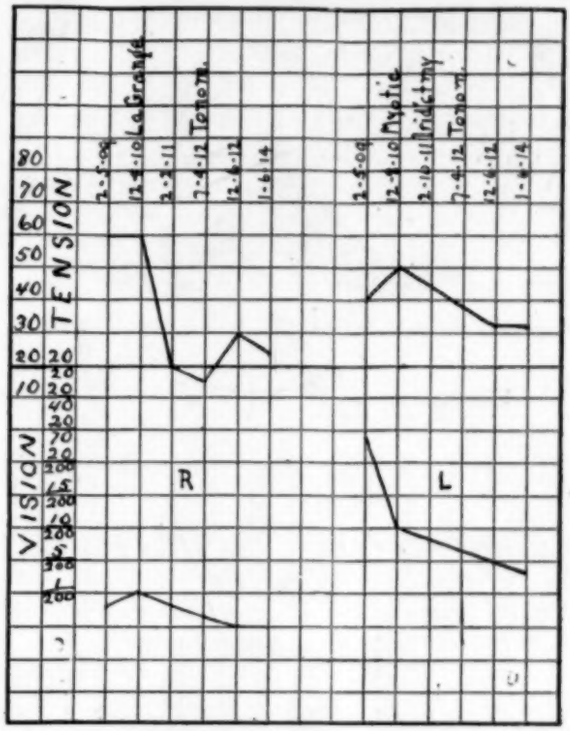

Fig. 11.—Vision and tension in Case 8.

July 4, 1912: Tonometer, right, 18 mm. Hg; left, 38 mm. Hg (no physostigmin). Fundus no change.

December 6: Right, light perception; left, 5/200. Tonometer: right, 29 mm. Hg; left, 34 mm. Hg.

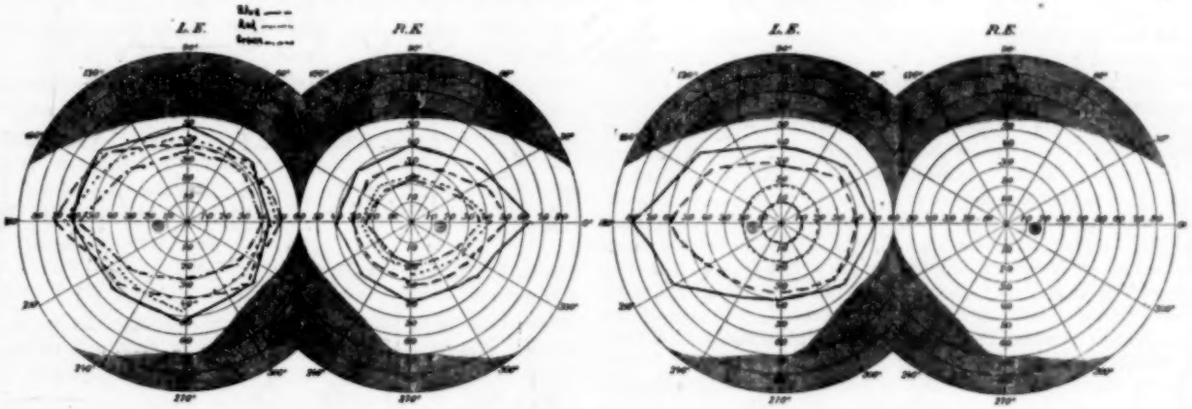

Fig. 10.—Fields of vision in Case 7, taken March 15, 1912. The contraction of the field in the right eye, and the confusion of colors in the left eye, led to operation on the right eye. The second field was taken for the left eye only, Jan. 3, 1914.

Jan. 6, 1914: Right, light perception; left, 4/200. Tonometer: right, 24 mm. Hg; left, 33 mm. Hg. Fundus, optic atrophy complete, vessels thread-like.

LAWFORD'S CASE.—McL., blind for some years before death. Information from two daughters, undoubtedly chronic glaucoma. He had thirteen children, of which the first, third and seventh died in infancy; the fifth and ninth from accidents and paralysis. The sixth became attacked with bilateral glaucoma when 66 and was operated on by Lawford. She

died at 71 from cerebral hemorrhage. She had seven children, all living. Author has seen all but the first. Three of them, the second, third and fifth are affected. The third and fifth have been operated on for marked chronic glaucoma, coming on at the age of 48 and 40 respectively. The second

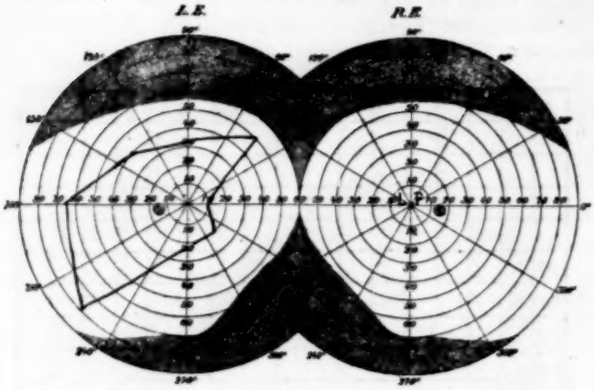

Fig. 12.—Fields of vision in Case 8, taken late in the disease.

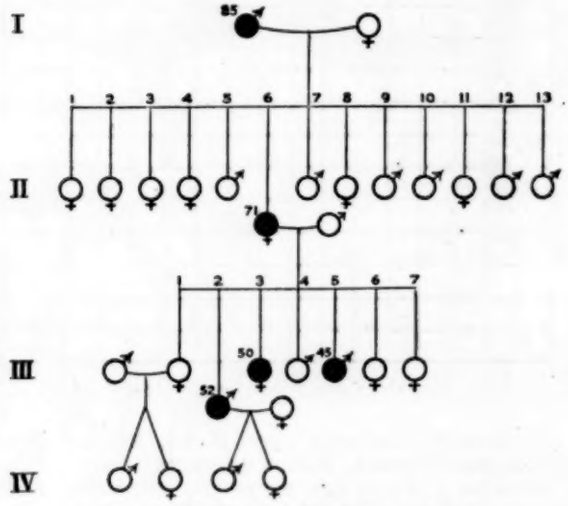

Fig. 13.—Pedigree of Lawford's patient.

child has no objective symptoms (doubtful rainbows once), but showed slight contraction of the left field in its basal part and a large deep cup in left disk. In Generation IV there are eleven persons, children of the first and second offspring in Generation III. The eldest in the first family is 27 years of age; the eldest in the second family 29; all are reported to have good sight. "Anticipation" is well exemplified in this (For pedigree see Fig. 13)..

Lucien Howe's Case.—"Anticipation" was well pronounced in this family. In Generation I, the fourth born developed glaucoma at 40 which led to complete blindness. The two affected children, in Generation II, the second and fourth, developed the disease at 28 and 25 respectively. In Generation III, the age of onset in the five persons attacked varied from 28 to 17 (Pedigree given in Fig. 14).

Nettleship's Case.—Three persons in three generations were affected and were all seen and operated on by the author. In Generation I, the disease began about the age of 71; in Generation II about the age of 40 and 48, and in Generation III between the ages of 25 and 30. A cousin of Generation II, the third on the maternal side is said to have been operated on for glaucoma (Pedigree given in Fig. 15).

Rudin's Case.—Generation I. Female blind from glaucoma at 30. Generation II, son of Generation I, became blind at 30. Generation III, two sons of Generation II were affected at 27 and 20 respectively.

In the review of the cases of glaucoma simplex of two and three generations, various comments by many authors were noted. Benedict in his early work cites a history of a gouty family all affected with glaucoma except one son, and he escaped because he had blue eyes. Arlt and Fischer, too, mention this phenomena, that in eyes with blue or gray irises glaucoma rarely develops.

Rogman reports a case of acute glaucoma developing from glaucoma simplex. Physiologic cupping was noted in the unaffected eye of one of the sons. The same condition with physiologic cupping was detected in a second son, who subsequently developed acute glaucoma. A third son has a similar picture of physiologic cupping in each eye with a hyperopia of 2.50 D. In none of these cases was there typical glaucomatous cupping, yet there was always a decided elevation in tension and diminished vision.

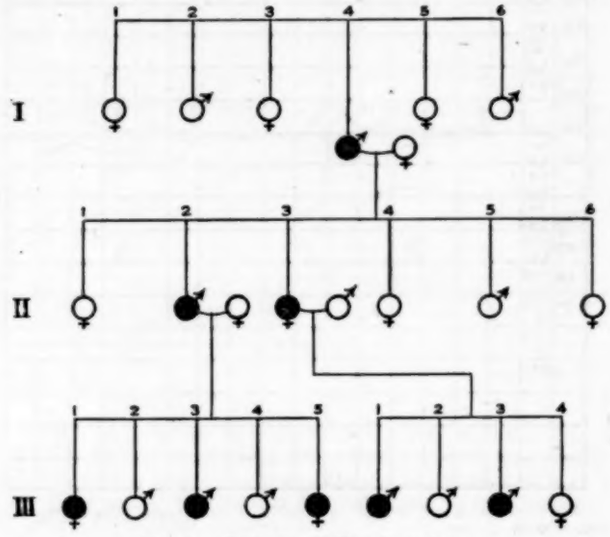

Fig. 14.—Pedigree of Howe's patient.

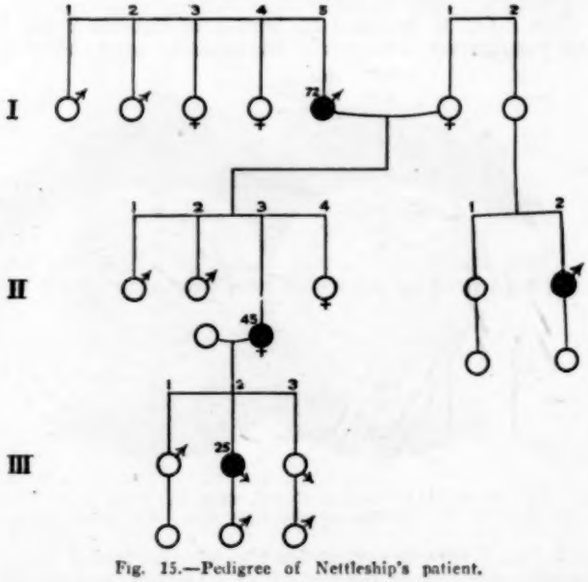

Fig. 15.—Pedigree of Nettleship's patient.

Priestley Smith has reported notes on glaucoma in two generations. A father, aged 65, hyperopia, 2.50 D.; horizontal diameter of the cornea, 10.5 mm.; a daughter, aged 29, left eye, hyperopia, 6 D. The right eye was excised for absolute glaucoma, and the measurements were: horizontal diameter of the

cornea, 10 mm.; globe horizontally, 22 mm.; vertically, 21 mm.; pole to pole, 21.75 mm. The normal horizontal diameter of cornea is between 11 and 12 mm., and the same author ventures the assertion that an eye with a cornea whose horizontal diameter is 10.5 mm. rarely escapes glaucoma. Glaucoma simplex of the hereditary type developing in myopic eyes is conspicuously mentioned, especially in Somya's report of a family.

SUMMARY

In summarizing the reported cases of hereditary glaucoma (simplex) we may briefly say that:

1. "Anticipation" is the most prominent feature, as Lawford mentions. Hereditary glaucoma, usually, I might say always, develops in adults, or at an age far remote from the usual period, and whenever a case of glaucoma simplex is recognized in one under the age of 30, interest should be aroused as to the hereditary tendency.

2. The smallness of the cornea and globe does play an important part; it however, is not the sole cause, for two families of myopes have been reported. Unfortunately few corneas have been measured.

3. General diseases other than gout and rheumatism, mentioned by the older writers, have small part in the causation of this disease.

4. The liability to transmission by the two sexes is roughly equal. The male sex shows a greater liability to inheritance.

A study of the family which I have reported shows the remarkable fact that defective vision was discovered at an early age in all cases. The father, when a young man of 30, unquestionably had glaucoma, and an iridectomy was performed. The youngest age was 11 (Case 6) and the sister (Case 2) first noticed dim sight at the age of 12, whereas in the cases of her three sons, (Cases 3, 4 and 5) they were some years older. The normal refraction of the eyes was emmetropic, or slightly hypermetropic. After operations the corneal astigmatism frequently changed to minus or mixed astigmatism.

In five of the cases, thirteen operations were performed on nine eyes. The right eye in Case 4 received an iridectomy and two trephines, until lowered tension was obtained. In my hands the iridectomy as performed for glaucoma and the sclerectomy with iridectomy of LaGrange, did not give the results which were finally obtained by the scleral trephine. Time will tell, however, whether or not the subnormal tension of 7, 11 mm. Hg thus obtained acts detrimentally to the glaucomatous eye.

As for the results in the five of the eight cases which I personally cared for, we might reasonably say that after atrophic change and cupping had taken place in the nerve (Cases 3 and 8), the operations have prolonged sight and possibly arrested in a measure early blindness, whereas in the early cases without ophthalmoscopic nerve-changes, with only a reduction of vision, elevation in tension and contracted fields as symptoms of the disease, the results are gratifying. In this connection attention should be directed to the fact that after all of the thirteen operations except two (Case 8), the patients were immediately allowed to return to their homes, and no complication, unusual delay in healing or bad after-effect was the result.

Candler Building.

SCLEROCORNEAL TREPHINING FOR GLAUCOMA *

WALTER R. PARKER, M.D.
DETROIT

I. REPORT OF COLONEL ELLIOT'S CASES

At the request of Chairman Todd, and with the consent of Colonel Elliot, I have the privilege of presenting to the members of the Section the results of the sclerocorneal trephining operations for the relief of glaucoma performed by Col. R. H. Elliot during his visit to the United States last fall.

In preparing this report, circular letters were sent out to those for whom Colonel Elliot operated, and reports of cases were received from the surgeons named in Table 1, to whom I wish to express my sincere appreciation for their hearty cooperation.

TABLE 1.—SURGEONS REPORTING OPERATIONS BY COLONEL ELLIOT

Name	No. of Operations
Robert Beattie	1
F. E. Cheney	1
A. E. Davis	2
L. Webster Fox	10
W. H. Fox	1
P. J. Pontius	1
George S. Derby	1
J. M. Ray	2
R. A. Reeve	5
G. C. Savage	3
Frank C. Todd	18
E. Torok	1
W. H. Wendell	2
W. H. Wilmer	3
E. B. Cayce	1
L. W. Callan	2
E. T. Easton	2
John Green, Jr.	4
A. G. Morse	1
W. R. Parker	6
Samuel D. Risley	1
McCluney Radcliffe	2
William M. Sweet	1
George E. deSchweinitz	2
H. H. Tyson	1
Will Walter	1
F. E. Woodruff	1
Total	76

TABLE 2.—SUMMARY OF OPERATIONS BY COLONEL ELLIOT

Patients operated on	61			
Eyes operated on	76			
		Results		
	No.	Good	Poor	Failure
Males, right eye	9	7	0	2
Males, left eye	9	7	1	1
Total	18	14	1	3
Females, right eye	16	11	2	3
Females, left eye	12	11	0	1
Total	28	22	2	4
Males, both eyes	8	15	1	0
Females, both eyes	7	11	1	2
Total	15	26	2	2
Eyes trephined after iridectomy and glaucoma extraction	11	10	1	0
Eyes trephined after iridectomy for cataract	4	2	0	2
Total	15	12	1	2
Good results trephined after iridectomy	90.9 per cent.			
Good results trephined after combined extraction of cataract	50 per cent.			

The classification of results in Table 4 is based on the effect the operation produced on the tension of the eyeball, the data concerning the acuity of vision before and after operation being too meager to justify conclusions.

* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* A report of the tabulated results of seventy-six operations performed by Col. R. H. Elliot during his visit to the United States, and a clinical study of twenty-seven operations by the author.

TABLE 3.—NUMBER OF CASES, TYPES OF GLAUCOMA AND RESULTS IN EACH GROUP OF CASES

Type of Glaucoma	Previous Iridectomy	Without Iridectomy	Complete Iridectomy	Partial Iridectomy	Iritis	Without Iritis	Results: Good	Poor	Failure
Absolute	1	1	..	..	..	..	..	..	1
Acute inflammatory	7	..	..	1	6	..	5	6	..	1
Simple	61	8	8	6	39	26	4	51	5	5
Secondary	5	4	..	..	1	1	4	4	..	1
Hemorrhagic	2	..	1	..	1	1	1	1	1	..
	76	13	9	7	47	..	..	..	..	..

GOOD RESULTS IN DIFFERENT TYPES OF GLAUCOMA

	No. of Cases	Per Cent.
Simple glaucoma	61	83.6
Acute inflammatory	7	85.7
Secondary	5	80
Hemorrhagic	2	50
All cases except simple	15	73.3

Of the twenty cases in which an iridectomy had been made, either at time of operation or previously, 10 per cent. showed signs of iritis, whereas in the fifty-six cases in which the trephining had been performed without or with a partial iridectomy, iritis was present in 51.7 per cent.

I have to acknowledge my great indebtedness to Colonel Elliot for his kindness in allowing me to present the results of his splendid work before the members of this Section.

My thanks are due to my assistant, Dr. William L. Benedict, for valuable assistance in tabulating the statistics here presented.

II. REPORT OF AUTHOR'S CASES

In the twenty-seven cases here reported, operation was performed at the Ophthalmic Clinic of the University of Michigan, except two, which were done in private practice.

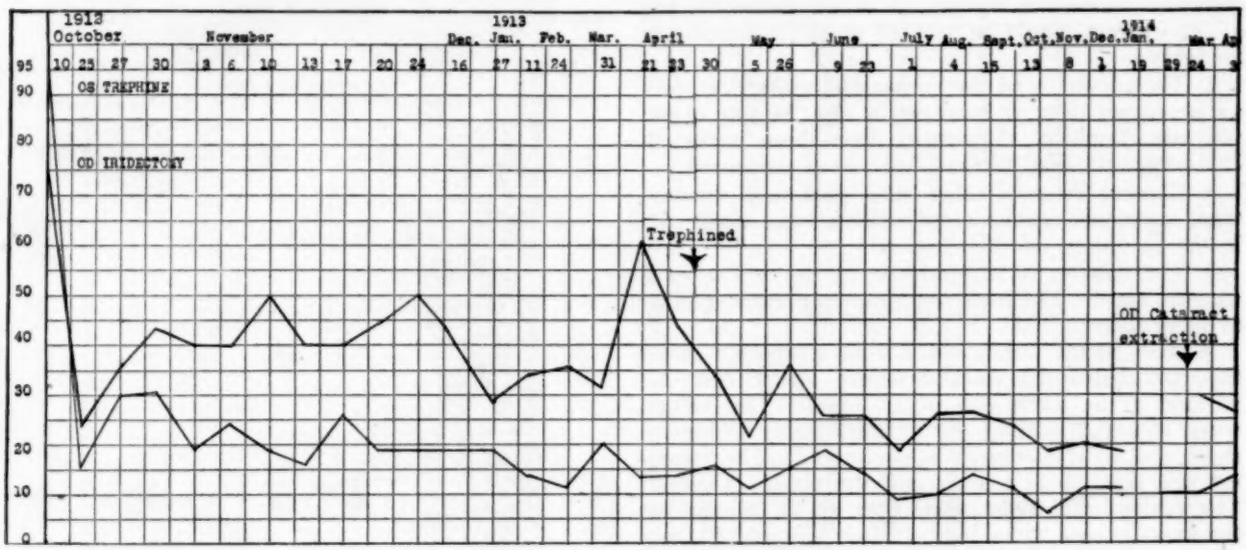

Chart 1.—Tonometric Records in Case 11.

TABLE 4.—RESULTS OF TREPHINING

	No.	Per Cent.
Operations	76	.....
Good results	62	81.58

	No.	Good	Poor	Failure	Not Stated
Eyes having had previous iridectomy	13	11	1	1	0
Eyes having complete iridectomy at time of trephining	7	7	0	0	0
Total	20	18	1	1	0
Good results in 90 per cent.					
Eyes having partial iridectomy at time of trephining	47	37	5	5	0
Eyes in which no iridectomy was done	9	7	0	2	0
Total	56	44	5	7	0
Good results in 78.4 per cent.					

TABLE 5.—CLASSIFICATION WITH REFERENCE TO THE PRESENCE OR ABSENCE OF IRITIS IN CASES IN WHICH A PREVIOUS IRIDECTOMY HAD BEEN PERFORMED OR A COMPLETE IRIDECTOMY WAS DONE AT THE TIME OF OPERATION

TREPHININGS FOLLOWED BY IRITIS

	No.	Iritis	No Iritis	Not Stated
Cases having complete iridectomy at time of trephining	7	1	5	1
Having had previous iridectomy	13	1	10	2
Total	20	2=10%	15=75%	3
Having no iridectomy	9	7	2	0
Having partial iridectomy	47	22	23	2
Total	56	29=51%	25=44.6%	2

TABLE 6.—SUMMARY OF AUTHOR'S CASES

Males	13	Eyes operated on	17
Females	7	Eyes operated on	10
	20		27
Cases in which both eyes were trephined			5
Cases in which the same eye was trephined twice			2

TABLE 8.—NUMBER AND TYPES OF CASES, TOGETHER WITH THE RESULTS OBTAINED IN EACH TYPE OF GLAUCOMA

Classification	No. of Cases	Good No.	%	Poor Results No.	Failure No.
Acute	1	..		..	1
Simple	14	11	=78.5	2	1
Chronic inflammatory	6	4	=66.6	2	..
Secondary to cataract extract	2	..		1	1
Secondary to luxated lens	1	..		..	1
Secondary to traumatism	1	1		..	..
Buphthalmos	2	..		..	2
	27	16		5	6

TABLE 9.—RESULTS OBTAINED IN CASES OF SIMPLE GLAUCOMA, COMPARED WITH THOSE IN ALL OTHER TYPES OF THE DISEASE AS CLASSIFIED

Type	No.	Results: Good No.	%	Poor No.	%	Failure No.	%
Simple	14	11	=78.5	2	=14.2	1	= 7.1
Other types	13	5	=38.4	3	=23.0	5	=38.4
	27	16		5		6	

Good results from simple cases.....78.5 per cent.
Good results from all other cases.....38.5 per cent.

I shall not discuss the technic of the sclerocorneal trephining operation, but rather confine my report to the clinical facts as presented by the case histories, and base my conclusions on these findings alone.

TABLE 10.—CLASSIFICATION WITH REFERENCE TO THE PRESENCE OR ABSENCE OF IRITIS IN CASES IN WHICH A PREVIOUS IRIDECTOMY HAD BEEN PERFORMED OR A COMPLETE IRIDECTOMY WAS DONE AT THE TIME OF OPERATION

Character of Iridectomy	No.	Iritis No. Per Ct.	No Iritis No. Per Ct.
Complete iridectomy at time of trephine operation	8	1 = 12.5	7 = 87.5
Previous iridectomy	7	2 = 28.5	5 = 71.4
Partial iridectomy	8	6 = 75.0	2 = 25
Without iridectomy	4	4 = 100	
	27	13	14

TABLE 11.—FREQUENCY OF OCCURRENCE OF IRITIS IN THE DIFFERENT FORMS OF IRIDECTOMY

	No.	Iritis No. Per Ct.	No Iritis No. Per Ct.
Total number of cases of complete and previous iridectomy	15	3 = 20	12 = 80
Total number of cases of partial or without iridectomy	12	10 = 83	2 = 16.6
	27	13	14

Of the fifteen cases in which the iridectomy was complete, three showed signs of iritis and twelve showed no signs of inflammation of the iris. On the other hand, of the twelve cases in which a partial or no iridectomy was performed, ten had iritis, while but two escaped. These results favor a complete iridectomy in the proportion of 20 to 83.3.

The results obtained by Colonel Elliot as tabulated in Table 5 justify the same conclusion.

Of the twenty cases in which an iridectomy had been made, either at the time of operation or previously, 10 per cent. showed signs of iritis; whereas in the fifty-six cases in which the trephining had been performed without or with partial iridectomy, iritis was present in 51.7 per cent. These results favor a complete iridectomy in the proportion of 10 to 51.7.

Of the six failures two (Cases 3 and 4) were cases of buphthalmos in the same patient. In each eye there was loss of vitreous at the time of operation, and it is possible that the opening was made too far back. Photophobia and keratitis, which were present at the time of operation, were very much improved, but ten weeks later there was in each eye a small white spot at the site of the trephine opening, and the tension had increased from 48 to 70 mm. in the right eye, and from 48 to 68 mm. in the left eye. The tension both before and after operation was taken under ether anesthesia. One case of glaucoma, secondary to cataract operation followed by uveitis (Case 14), was a very unfavorable case for any operative procedure. The tension at the time of the operation was 36 mm. Twelve days after operation it was 14 mm., but soon increased, until in two months' time it had reached 100 mm. At this time the eye was enucleated for relief of pain, the patient refusing to submit to any other operative procedure. The fourth case (Case 15) was probably one of hemorrhagic glaucoma. No ophthalmoscopic examination could be made, but the fellow eye showed a marked hemorrhagic retinitis. The last case (Case 16) was one of chronic inflammatory glaucoma, vision nil, deep scleral injection, very shallow anterior chamber, iris inflamed, tension 60 mm. A 1.5-mm. trephine opening was made associated with a small iridectomy, with no relief of tension. Later a 2-mm. opening was made with small iridectomy. The tension was temporarily reduced, but the eye was too tender to permit of tonometric obser-

TABLE 7.—VISION AND TENSION BEFORE AND AFTER OPERATION, AND RESULT AS DETERMINED BY TENSION AT TIME OF LAST OBSERVATION

Case No.	Date	Type	Vision Before—After Operation *		Tension Before mm.	Date	After mm.	Result	Remarks
1	12/ 9/12	Traumatic secondary.	Nil	Nil	95	4/ 9/13	21	Good	
2	12/16/12	Simple	6/15	6/15	44	2/ 2/13	21	Good	
3	5/ 3/13	Buphthalmos	?	?	48	7/14/13	70	Failure	
4	5/ 3/13	Buphthalmos	?	?	48	7/14/13	60	Failure	
5	5/26/13	Simple	Nil	Nil	70	6/ 4/13	16	Good	
6	5/26/13	Secondary cataract.	5/30	1/60	83	7/12/13	47	Poor	Immediate result good 17 days after operation. Tension 16 mm. Discharged cured. One month later, tension 47.
7	7/ 7/13	Simple	1/60	l. p.	47	7/ 8/13	20	Good	
8	10/31/12	Chronic inflammation.	Nil	Nil	60	3/13/13	13	Good	
9	10/3 /12	Chronic inflammation.	Nil	Nil	71	3/13/13	18	Good	
10	10/10/12	Simple	l. p.	l. p.	39	1/27/14	16	Good	
11	10/17/12	Simple	l. p.	l. p.	105	3/24/14	10	Good	
12	4/24/13	Simple	5/60	1/60	45	3/24/14	27	Good	
13	10/17/12	Simple	Obj.	Obj.	60	10/ 3/12	12	Good	
14	10/31/12	Secondary	l. p.	Nil	36	2/ 7/13	100	Failure	Immediate results good. Tension at end of two weeks 14 mm.
15	11/21/12	Chronic inflammation.	Nil	Nil	83	12/22/12	82	Failure	Hemorrhagic, Glau. O. S.
16	2/24/13	Chronic inflammation.	Nil	Nil	60	5/ 5/13	60	Failure	
17	6/30/13	Chronic inflammation.	Nil	Nil	60	3/ 5/14	20	Good	
18	4/24/13	Sec. luxated lens.	Nil	Nil	91	1/ 7/14	55	Failure	
19	7/ 7/13	Simple	5/60	5/60	51	11/ 6/13	15	Good	
20	7/21/13	Simple	5/60	6/60	51	11/ 6/13	7	Good	
21	11/20/13	Chronic inflammation.	Fingers	6/30	50	1/19/14	18	Good	
22	10/20/13	Simple	Nil	Nil	60	10/31/13	70	Poor	
23	10/10/13	Simple	Nil	Nil	44	10/31/13	60	Poor	
24	1/ 8/14	Acute inflammation.	l. p.	Nil	62	2/ 2/14	50	Poor	Immediate results good. Tension 24, ten days after operation.
25	1/12/14	Simple	Nil	Nil	73	3/19/14	36	Good	Subsequent to last tension record eye soft, but tonometer record not recorded.
26	1/14/14	Simple	6/20	6/20	36	2/ 4/14	26	Good	
27	11/20/13	Simple	6/9	Obj.	43	4/ 6/14	15	Poor	Immediate result perfect, chamber closed on 19th day. Quiet iritis, with exudate in pupillary space.

* In this column l. p. stands for light perception.

vations. Two months after the second operation the tension was 60 mm., and there was a large prolapse of iris or ciliary body at the site of each trephine opening, one about 2 mm. and the other fully 3 mm. in diameter.

A comparison of the results obtained from an iridectomy and a sclerocorneal trephining operation is well shown in Case 11 (Chart 1), an advanced case of simple glaucoma in both eyes. Vision was reduced to light perception, tension right eye 75 mm., left eye 105 mm. Oct. 10, 1912, I performed a deep iridectomy on the right eye and trephined the left, using a 1.5-mm. trephine, and included the pupillary border of the iris in the iridectomy. Fifteen days later the tension in the right eye was 22 mm., in the left eye 18 mm. Five days later the tension in the right eye, which had been trephined, was 30 mm., but later it dropped to between 11 and 20 mm., where it has since remained. The eye on which an iridectomy was done gradually increased in hardness until on April 21, 1913, five months after operation, the tension was 60 mm. A sclerocorneal trephining operation was performed at this time and the tension reduced to 20 mm., where it remained for nine months, when, following a cataract extraction, it increased to 30 mm., but soon dropped to normal, where it has remained until the present time.

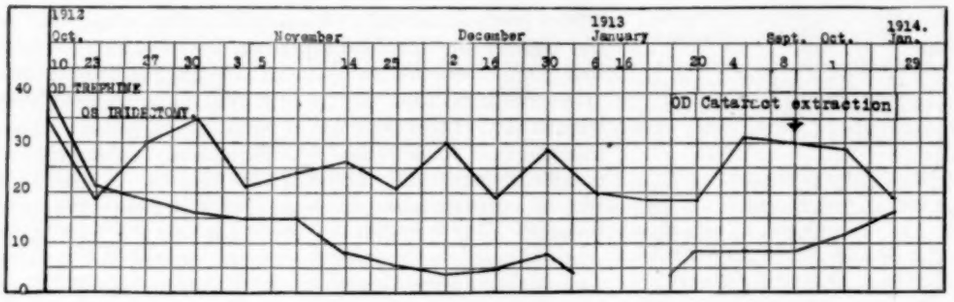

Chart 2.—Tonometric Records in Case 10.

The results in a second case on which a comparative test was made and kept under observation for a period of two and one-half years is shown in Chart 2 (Case 10). The right eye, with a tension of 30 mm., was trephined on Oct. 10, 1912, and at the same time the left eye, with a tension of 35 mm., was subjected to a broad, deep iridectomy. Vision in each eye at the time of operation was light perception. The tension of the eye which was trephined was reduced to between 4 and 10 mm., while that on which an iridectomy was done was reduced to between 20 and 30 mm. While the result in this case is recorded as good, it would be important to know what effect prolonged low tension would have on vision.

In Chart 3 is shown the tonometric result in a case of simple glaucoma in both eyes with an acute exacerbation in the left. An iridectomy in the left eye followed by a trephining operation failed to keep the tension down, and the eye was enucleated for the purpose of relieving pain. The tension in the right eye has remained normal since the time the iridectomy was performed.

CONCLUSIONS

The average results obtained from the sclerocorneal trephining operation for relieving glaucoma are better in the non-inflammatory type than in the other forms of the disease.

The results obtained when the operation was associated with a complete coloboma were better, as regards both the frequency of the occurrence of iritis and the effects on the tension, than when performed with a partial iridectomy or when the iris was left intact.

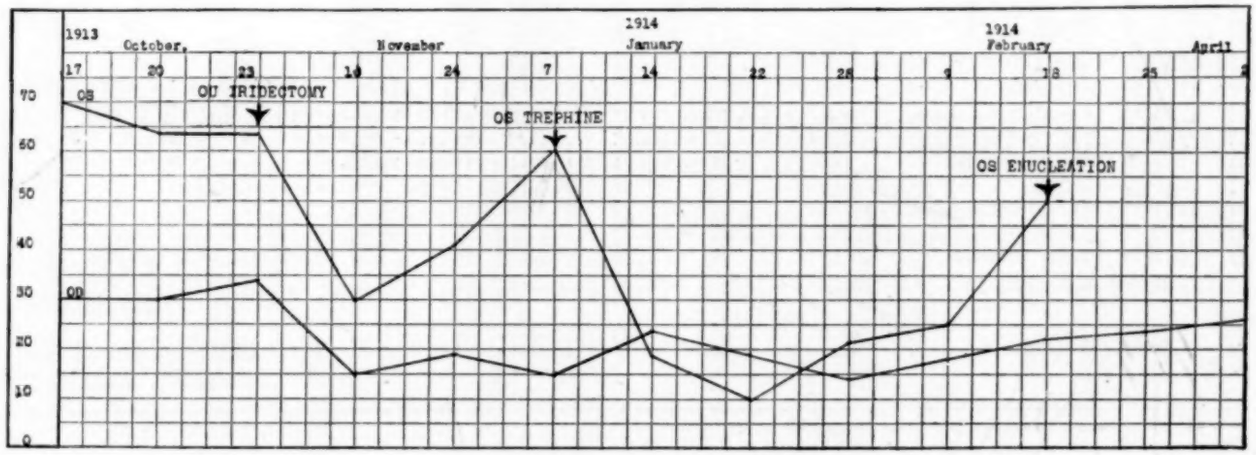

Chart 3.—Tonometric Records in Case 24.

The remote results may not be so good as those shown immediately after the operation.

The number of cases here recorded is not sufficiently large to permit of definite conclusions concerning the real value of the sclerocorneal trephining operation in relieving glaucoma.

I am greatly indebted to Dr. D. V. Smith of the Ophthalmic Department of the University of Michigan for valuable aid in preparing the statistics presented in this paper.

32 Adams Avenue.

THE VALUE OF MIOTICS IN CHRONIC GLAUCOMA *

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PHILADELPHIA

I have already treated of this subject before the Section on two previous occasions, at the Boston session in 1906 and the Chicago session in 1908, and this third paper is largely supplementary to these earlier communications.

At the 1908 meeting, sixty-five cases of simple chronic glaucoma were analyzed which had been treated by miotics, of which all but seven had been observed over a period of two years, and twelve for more than ten years, and the results attained by the constant and prolonged use of these drugs were compared with a similar series of cases treated by iridectomy. Among the percentages deduced from this analytic study it was found that central vision was maintained in the miotic series, each case of which was observed over an average period of five years and eight months, in 80 per cent. of the cases, in comparison with 25 per cent. in the most favorable group of iridectomized eyes. Other figures bearing on other phases of the glaucoma problem were equally conclusive as to the superiority of the drug treatment and demonstrated conclusively that miotics exert a much more beneficial influence on the progress of simple chronic glaucoma than the removal of a portion of the iris. Whether or not better results will be found to follow the newer operations for glaucoma, time and the careful analysis of a large series of cases treated by these more recent methods can alone determine; and though it would appear that the establishment of a permanent filtration scar by the trephine gives greater hope of retaining vision in a higher percentage of cases than other operative means, it must be remembered that the claims for this procedure have not yet been proved, and some years must still elapse before a true estimate may be had of the value of this now popular measure.

Of the sixty-five cases analyzed by me in my 1908 series, twenty-two were taken from my own records, the remainder contributed by generous colleagues. During the six years which have elapsed since the publication of that report, nine of my twenty-two patients have either died or passed from under my observation; thirteen, however, still remain under my care, and their further progress, with the histories and analyses of eighteen additional cases, also from my private practice and all observed over a prolonged series of years, will form the basis of the present communication.

Of the 13 cases remaining from the 1908 series, 1 was observed for a period of 21 years, 3 for 18 years, 1 for 16 years, 2 for 14 years, 2 for 12 years, 1 for 10 years, 1 for 8 years, 1 for 7 years and 1 for 6½ years. In this series but 22 eyes lend themselves to analysis, as 3 were blind when they came under observation and one had been iridectomized.

Of the 22, 17 eyes were either normal or showed but the earliest traces of glaucoma at the first examination, in 3 the disease was moderately advanced, while in 2 the glaucomatous process had progressed to such an extent that but little vision remained. Fourteen eyes of this first group retained practically normal vision and field as long as they were under observation, a general average of ten years, as follows:

One eye presented practically normal vision and field after 21 years, 5 eyes after 18 years, 1 after 16 years, 1 after 14 years, 2 after 12 years, 1 after 10 years, 2 after 8 years and 1 after 7 years.

Three went blind while under treatment, in 5, 6 and 10 years, respectively. Of the 3 eyes in which the disease was but moderately advanced, 1 went blind in 2 years; the others have maintained vision 8 and 10 years, respectively. The results attained in the 2 eyes in which the disease was farthest advanced were strikingly good, vision and field being maintained without further loss in 1 case for 10 years, while in the second but a slight loss was recorded during the same period.

Of the 18 cases now reported for the first time, 1 was observed for a period of 18 years, 2 of 10 years, 1 of 8 years, 1 of 7 years, 7 of 6 years, 1 of 5 years, 2 of 3 years, 2 of 2 years and 1 of 1 year.

These 18 cases presented but 24 eyes for analysis, some of the patients having already lost one from glaucoma before consultation, while in others but 1 eye was affected. Of these 24 eyes, 13 showed but the rudiments of the disease at the first examination, the glaucomatous process was moderately advanced in 8, while in 3 central vision and the visual field were greatly compromised. In the first group practically normal vision has been maintained while the cases have been under observation, for periods ranging from 5 to 18 years, an average of 7½ years. In the second group of 8 eyes, vision has been maintained for periods ranging from 2 to 10 years, an average of about 4 years, while in the 3 eyes which were in the most advanced stage of the disease, vision has been maintained for periods ranging from 1 to 6 years, an average of 3 years. It should be noted that in 2 out of these 3 eyes the disease was of a pronounced hemorrhagic type and that notwithstanding this, vision is still maintained in 1 after a period of 6 years and that blindness ensued in the other after the maintenance of 6 years of fair vision.

The figures obtained by the analysis of these 31 cases agree in large measure with those published in connection with the 1908 series. As it was pointed out at that time, just as the advocates of operative measures find beginning cases to be more amenable to treatment than those in the more advanced stages of the disease, so cases treated by miotics from the early stages give better percentages so far as the maintenance of central and peripheral vision is concerned. Twenty-seven of the 46 eyes analyzed in the two groups of cases belonged to this class, and with the exception of 3, all preserved nearly normal vision and fields as long as they remained under observation, and this is the more extraordinary when it is considered that 1 of these cases has been observed for 21 years, 4 for 18 years and 8 for a period of 10 years or more. As I remarked in a previous paper, in view of such favorable statistics from the use of miotics, when the risks and complications attending all operations on the eye are considered, as well as the possibility of error in the diagnosis and operation being performed on eyes with merely atrophic nerves, is

* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* On account of lack of space this paper has been abbreviated for THE JOURNAL by omission of some of the case reports. It will appear in full in the Transactions of the Sections and in the author's reprints.

operation ever justified when both central and peripheral vision are normal, without trial of what miotics can do?

In 11 eyes in which the disease was noted as being moderately advanced, in the first group, 2 maintained vision for 8 and 10 years, respectively, and 1 went blind in 2 years, in the second group vision has been maintained for periods ranging from 2 to 10 years, an average of about 4 years. The best results of all, relatively speaking, were attained in the far-advanced or desperate cases, for of the 5 cases so designated, vision and field were maintained without further loss in 1 case for 10 years, and in a second with but slight loss during the same period. In the remaining 3 eyes, vision has been maintained for periods ranging from 1 to 6 years, and this in spite of the fact that in 2 of the latter the disease had assumed a hemorrhagic type. I would recall, in this connection, the remarkable results attained in Case 48 of the 1908 series, in which full central vision was maintained in a typically glaucomatous eye with field cut almost to fixation for 14 years.

It is in this class of cases that iridectomy has been attended with such bad results, and while cyclodialysis and the trephining operations may be less injurious, I shall continue to employ miotics continuously and energetically until convinced by the report of a series of suitable cases that operative measures have proved their superiority. My observations have convinced me that miotics cannot be regarded in any sense as curative, for notwithstanding their continuous use, the glaucomatous process still goes on, very slowly, it is true, but the eye grows steadily harder, the excavation becomes broader and deeper and the anterior chamber shallower. Again, I desire to emphasize what I have already said elsewhere, namely, that miotics should be relied on as the sole means of treatment only in those cases which are free from attacks of so-called glaucomatous congestion, the presence of such congestive symptoms being in my opinion the chief indication for some form of operative treatment, be it iridectomy, cyclodialysis or trephining; and second, that to gain the full benefit of miotics it is necessary that they should be administered properly. Beginning in doses small enough to avoid creating spasm of the ciliary muscle, and rapidly increasing the dose until the pupil of the affected eye is strongly contracted, this degree of contraction should be maintained as long as life lasts by gradually increasing the strength of the solution, from time to time, and by instillations of the drug at intervals of every three or four hours.

The miotics which are best adapted to control intraocular tension are physostigmin (eserin) salicylate and pilocarpin nitrate. This salt of physostigmin is more persistent in its effects and less changeable in solution than other salts of the drug and is less irritating to the conjunctiva. I prescribe a solution of pilocarpin to be used about every four hours, morning, noon and evening, and one of physostigmin of twice the strength at bedtime, thereby avoiding in a measure the blurring of vision which is occasioned by the action of the physostigmin on the ciliary muscle during the day, while the eye receives the greatest effect of the drug during the eight hours or more which elapse between the instillations of the drops during the night. In incipient cases of the disease an excellent initial dose is that of ⅛ grain of pilocarpin to the ounce of water. The strength should be gradually increased, so that at the end of a year 1 grain to the ounce is employed, at the end of the second year 2 grains, and at the end of the third year 3 grains to the ounce solution. This strength will suffice to maintain the pupils at the desired point of almost pin-point contraction. Physostigmin should be employed in half the strength of pilocarpin and should be increased in solutions of equal proportions.

Conjunctival irritation can usually be avoided by employing only fresh and sterile solutions of the miotics and by frequent cleansing of the conjunctiva by boracic acid solution. Should such irritation arise, local applications of argyrol and flushing of the conjunctiva with mild lotions, conjoined with the use of ice compresses and a weakened dose of the miotic will usually occasion its prompt disappearance.

Gentle massage of the eyeball is of decided advantage and should be practiced several times each day, for five minutes at a time. In addition to these local measures, the patient should be instructed as to the number of hours daily the eyes should be used in near vision. All near work should, of course, be restricted, and should be carried on only under the most favorable conditions regarding illumination, posture of the patient, etc.

Proper lenses should be adjusted to the eyes for both near and far use, and the refraction should be frequently estimated and any error corrected, changes in the refraction being rendered frequent by the action of the miotic on the ciliary muscle.

A large number of hours daily should be spent in the open air, and, as the disease is frequently the ocular expression of chronic rheumatism and gout, the patient should be urged to spend the greater part of the year under the most favorable climatic conditions to combat that diathesis. The skin should be kept active, the gastro-intestinal apparatus regulated, and any local source of inflammation or irritation, neighboring on the eyes, such as inflammation in the nasal passages or their accessory sinuses, should be allayed. Particular care should be given to the peripheral circulation, nitroglycerin and strophanthus being often of value. Strychnin should be administered, not only on account of its action on the circulation, but also because of its influence on the optic nerve. On account of their antirheumatic properties, the salicylates are of decided value and should be administered frequently for continued periods.

The notes of the thirty-two cases follow. These are necessarily much abbreviated and give but the briefest description of the progress of each case. The fields are reproduced in outline merely, and though in many instances a careful test of the visual field was made every three or four months, on account of the necessity for brevity, but one set of fields is published for each year or series of years. The outlines were obtained by testing with 10 mm. white and red objects, the outer representing the white field, the inner the red. All reference to the dosage of the miotics has also been omitted, the treatment prescribed in each instance having been along the lines specified in the preceding paragraphs.

REPORT OF CASES

Case 1 (Case 1 of 1908 series).—Woman, aged[1] 81, under observation nearly twenty-one years, first sought treatment on account of secondary glaucoma in the right eye, following

1. The age given in all of the cases refers to what it was at the time of last observation.

iritis. Iridectomy was performed, but without avail, vision soon being reduced to 2/40 eccentrically, and the field being much contracted.

Examination.—O. S., signs of chronic glaucoma, anterior chamber shallow, sclera rigid, commencing pathologic excavation.

O. S. V. + S. 0.50 D. ⊃ + C. 0.25 D. ax. 20° = 5/5.

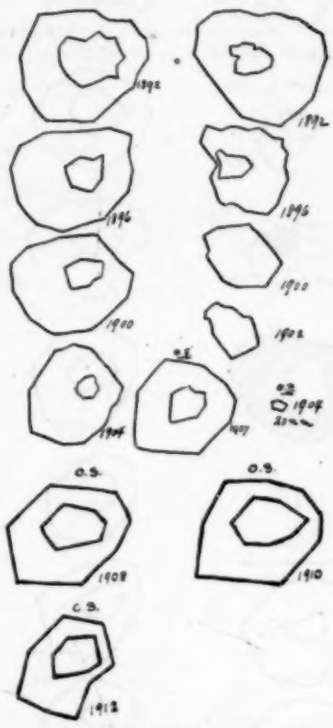


Fig. 1.—Fields of Case 1.

Field normal. This patient has been seen at intervals of at least every six months during twenty-one years, the miotics being gradually increased in strength until pilocarpin, 4 grains to 1 fluidounce, 2 drops three times a day, is now employed to keep the pupil contracted ad maximum.

During the past six years the disease has progressed but little. Vision equals 5/6, field but moderately cut. Reduction in vision and field doubtless are due to lenticular haze. This patient has been most assiduous in carrying out the treatment, and the splendid results must be attributed to that. At no time in the twenty-one years has there been any conjunctival irritation from the drugs.

Remarks. — Glaucomatous process held in check while under observation for almost twenty-one years, central vision being still normal and the field but slightly contracted.

CASE 2 (Case 5 of 1908 series).—Woman, aged 64, under observation eighteen years. Full vision still maintained. Field but slightly contracted. Some tendency to conjunctival irritation, readily combated with astringents. At first examination in 1896:

O. D. + S. 1.75 D. ⊂ + C. 0.75 D. ax. 100° = 5/5.
O. S. + S. 1.25 D. ⊂ + C. 0.50 D. ax. 60° = 5/5.

Both optic nerves hyperemic, with central excavations. Patient seen at intervals of one or two years for change of glasses and minor symptoms. Eight years after first observation, both optic nerves were noted as being pale and "luminous" and the excavations were deep and undermined above, this being the more pronounced in the right eye. The anterior chambers were shallow and the sclera rigid. Vision and fields normal. The strength of the miotics has been gradually increased, the pupils being maintained at pin-point contraction, but the excavations have gradually extended until they are now pronouncedly glaucomatous. Vision and fields practically normal in each eye.

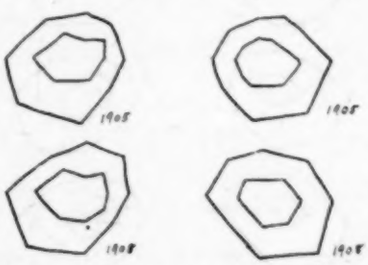


Fig. 2.—Fields of Case 2.

Remarks.—Development of glaucoma cups while under observation. Stage of hyperemia of the nerve preceding the atrophic process. Maintenance of full visual acuity and extent of visual fields with miotics.

CASE 3 (Case 20 of 1908 series).—Woman, aged 86, under observation eighteen years. At time of first observation complained of occipitofrontal pains radiating into the eyes, worse on the left side. Six months previously she had had several attacks of sudden failure of vision in the left eye, which had lasted for a few minutes. During these periods of visual obscuration, the defect began in the temporal field. Both nerves were hyperemic, central excavation in the right eye becoming undermined down and out. Excavation in the left eye shallow but typically glaucomatous. Anterior chambers shallow. Sclerae rigid, especially in O.S.

At the end of two years, vision had deteriorated in O.S. to 3/60, and at the end of another year to 1/60, at which it still remains.

1901: O. D. V. + C. 0.25 D. ax. 70° = 5/5.
1902: O. D. V. — S. 0.25 D. ⊃ — C. 0.50 D. ax. 120° = 5/5.
1903: O. D. V. — S. 0.50 D. ⊃ — C. 0.75 D. ax. 145° = 5/5.
1905: O. D. V. — S. 1. D. ⊃ — C. 1.25 D. ax. 145° = 5/5.
1906: O. D. V. — S. 2. D. ⊃ — C. 1.25 D. ax. 145° = 5/5.
1907: O. D. V. — S. 1.25 D. ⊃ — C. 1.25 D. ax. 145° = 5/5.

This patient was seen once in 1908 and again in 1911, though the miotics were employed continuously in the interim. In 1908, vision equaled 5/9 in the remaining eye (O. D.), and in 1911, 5/15. The fields were not taken on either of these occasions. As the patient was 94 years of age when the last examination was made and as there was considerable haze of the lens, the result must be regarded as being most satisfactory.

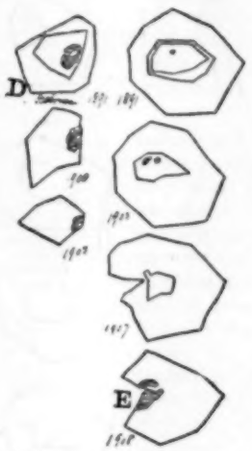


Fig. 3.—Fields of Case 3.

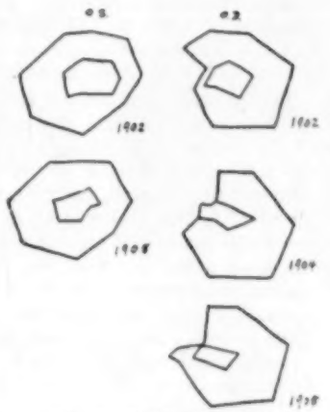


Fig. 4.—Fields of Case 4.

Remarks.—Glaucoma held in abeyance in O. D. for 18 years, in O. S. five or six years, by miotics. It is probable that a more favorable result would have been gained in O. S. had an interval of several years not elapsed during which the miotics were used irregularly. At times, during the course of the disease, subacute symptoms arose, which were promptly made to disappear by stronger doses of pilocarpin.

CASE 4 (Case 4 of 1908 series).—Man, aged 51. Under observation 18 years. At time of first observation, both optic nerves hyperemic, especially the left.

O. D. + S. 0.50 D. ⊃ + C. 0.75 D. ax. 90° = 5/5.
O. S. + S. 0.50 D. ⊃ + C. 1. D. ax. 70° = 5/5.

Fields of vision normal. Left-sided neuralgia at times, with some pain in corresponding eye. Seen at intervals of one or two years. Eight years after first observation excavations in each eye noted as being suspicious, and physostigmin, 1/12 grain to the ounce, 2 drops each day, prescribed. Two years later excavations more pronounced, especially in O. D. Vision and field of vision normal in each eye. At present quite a deep glaucomatous excavation in O. D., extending to scleral ring externally. The excavation in O. S. has also become glaucomatous, being more extended but not so deep as in the fellow eye. Some contraction of O. S. field to nasal side. Tonometer shows O. D. 35 mm. Hg, O. S. 25 mm. Hg.

CASE 5 (Case 6 of 1908 series).—Woman, aged 79, under observation sixteen years. Gradually failing vision in each eye for some months at time of first consultation. Gouty. Suffers from nasal catarrh. Both optic nerves hyperemic, with large temporal excavations. Sclera rigid. Anterior chambers shallow. Fields of vision normal.

O. D. V. + S. 1.75 D. ⊃ + C. 0.50 D. ax. 30° = 5/5.
O. S. V. + S. 1.25 D. ⊃ + C. 0.75 D. ax. 60° = 5/5.

The patient has been seen at intervals of six months, and, though the nerves have become somewhat atrophic and large shallow glaucomatous cups have developed in each eye, the anterior chambers shallower and tension increased, central vision and the fields of vision have remained almost normal. Considerable haze of O. D. lens with some involvement of pupil area.

Remarks.—Glaucoma developed under observation despite use of miotics, but vision and visual field have remained normal.

CASE 6 (Case 9 in 1908 series).—Woman, aged 74, under observation fourteen years. Gouty. Has always suffered from head pain. At time of first consultation nerves gray; shallow physiologic excavations, that in the left eye with undermined edges. Sclera rigid. Fields normal.

O. D. + S. 0.75 D. ⊃ + C. 0.50 D. ax. 50° = 5/5
O. S. + S. 0.75 D. ⊃ + C. 0.25 D. ax. 120° = 5/5.

Second observation, a year later, when excavation in O. S. was found to be deeper and more glaucomatous in type. Head pain had persisted despite use of glasses, but there was no obscuration of vision in either eye. Vision and field still normal.

The patient then passed from observation for four years, although she had been warned of the necessity of frequent observations of the left eye and told of its glaucomatous nature. At the visit, four years later, complaint of failing vision in O. S. for a year or more was made and also of a continuance of the head pain. Examination showed a deep typical glaucomatous cup in the left eye and a shallow glaucomatous one in the right. Both nerves quite gray and walls of retinal vessels thickened. Pilocarpin, 1 grain to 1 fluidounce three times a day, with strychnin and nitroglycerin.

O. D. V. + S. 1.5 D. ⊃ + C. 0.50 D. ax. 30° = 5/5
O. S. V. — C. 0.50 D. ax. 30° = 5/7½.

During the past six years, vision and field of vision have steadily deteriorated in each eye, that in the right eye now equaling 5/15 (— S. 0.50 D. ⊃ — C. 0.62 D. ax. 110°), that of the left hand-movements in the temporal field only. There is a moderately deep cup in the right eye and tension is decidedly elevated.

Remarks.—This case illustrates that the glaucomatous process may arise in an eye in which miotics are being continuously employed, and progress, though slowly, to a considerable degree. By reason of advanced intra-ocular changes, this case was thought to be inoperable, an opinion in which Mr. E. Treacher Collins of London, in consultation, concurred, so that while the results obtained from the miotics are not all that could be desired, nevertheless they have stayed the progress of the disease very markedly, and the patient still has useful vision remaining in one eye.

CASE 7 (Case 30 of 1908 series).—Woman, aged 83, under observation fourteen years. History of failing sight for two years. Rheumatic. Large glaucomatous excavations in each eye, more pronounced in the left eye. T. + in each eye.

O. D. V. + S. 0.50 D. = 5/5 partly.
O. S. V. + S. 0.50 D. ⊃ + C. 0.50 D. ax. 145° = 5/5 partly.

Remarks.—As the years have passed, tension has steadily risen, with all the attendant signs of a steadily progressive chronic glaucoma. Even at the first examination, sclerosis of the retinal vessels was marked and the circulation of the optic nerves manifestly poor. Two years ago, the left eye became suddenly blind from thrombosis of the central artery of the retina, and within the past few months the temporary half of the right field has been lost as part of a hemiplegia resulting from a cerebral thrombosis. Throughout the case, there has been the complication of a large mucocele of the frontal cells, which has fortunately at all times been kept freely drained by nasal treatment. Miotics have been persistently administered, without causing any conjunctival irritation.

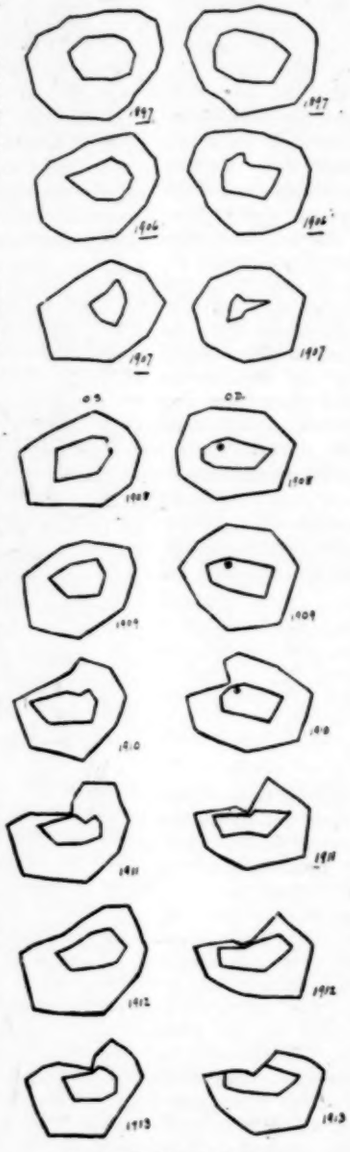


Fig. 5.—Fields of Case 5.

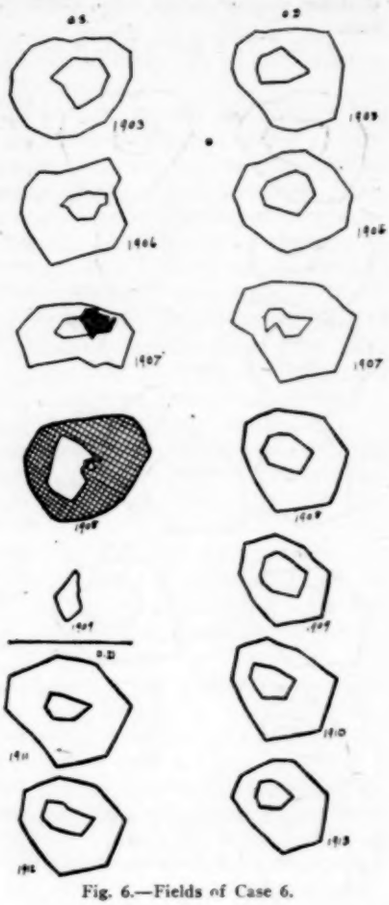


Fig. 6.—Fields of Case 6.

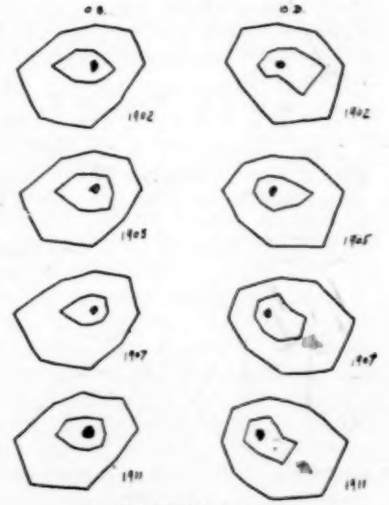


Fig. 7.—Fields of Case 7.

CASE 8 (Case 10 of 1908 series).—Woman, aged 77, under observation twelve years. At time of first consultation, vision said to have failed in each eye during the six months previous. Both nerves hyperemic, with large excavations becoming undermined to nasal side. Venous pulse. Anterior chambers shallow. Sclera rigid. Fields normal.

O. D. V. + S. 2.5 D. ⊃ + C. 0.25 D. ax. 145° = 5/5.
O. S. V. + S. 2.5 D. ⊃ + C. 0.25 D. ax. 160° = 5/5.

At end of two years cups had assumed a typical glaucomatous appearance, and tension was appreciably elevated in each eye. Central vision still normal, but form fields somewhat compromised concentrically, that for red being decidedly restricted.

At the end of six years, moderately deep glaucoma cups, anterior chambers quite shallow. Tension elevated.

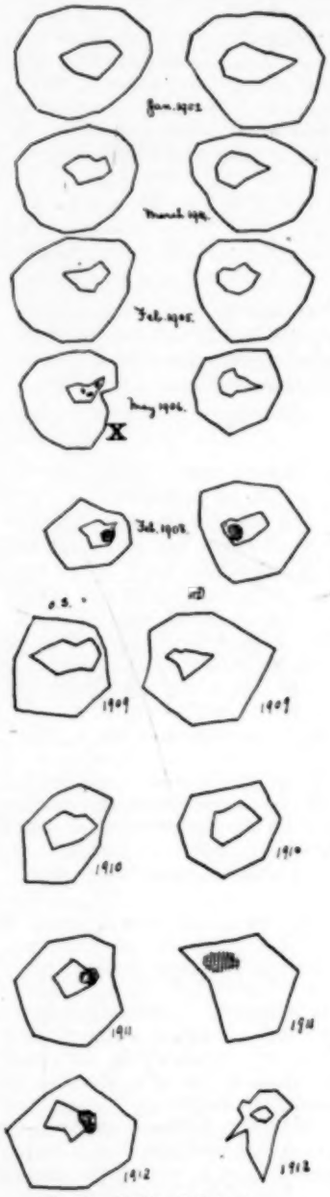


Fig. 8.—Fields of Case 8.

O. D. V. + S. 0.25 D. ⊃ + C. 0.62 D. ax. 30° = 5/5.
O. S. V. + S. 1.25 D. ⊃ + C. 0.37 D. ax. 30° = 5/5.

During the past six years, there has been a steady progression of the disease with an increasing lenticular haze. Vision reduced to 5/35 in O. D. and to 5/15 in O. S. This loss is not altogether attributable to the glaucoma, however, as the commencing cataracts undoubtedly obscure vision.

Remarks.—The patient, now aged 77, has been under observation since she was 65 years of age and still has useful vision. If central vision deteriorates further, iridectomies will be advised, with a view to enlarging the pupils, possibly decreasing tension, and to pave the way for the delivery of the cataractous lenses.

CASE 9 (Case 17 of 1908 series).—Woman, aged 61, under observation twelve years. At time of first observation, dimness in left eye of six weeks' standing. Gouty. Mother had glaucoma. Both optic nerves gray; central excavation in the right eye and a forming glaucomatous one in the temporal half of the left nerve; sclera rigid, especially in O. S.; both anterior chambers shallow.

O. D. V. + S. 0.50 D. ⊃ + C. 0.37 D. ax. 110° = 5/5.
O. S. V. + S. 0.50 D. ⊃ + C. 0.37 D. ax. 70° = 5/5.

During the past six years there has been but little progress in the disease. Vision is still normal in each eye and the field is but little more restricted than it was seven years ago. Miotics have been used constantly always with a tendency to create conjunctival irritation. Patient lives at a distance, and is doubtless not careful to use only fresh and sterile drugs.

Remarks.—Glaucoma controlled in left eye, despite the considerable involvement of nerve which was present when the patient first came under observation. Right eye still normal.

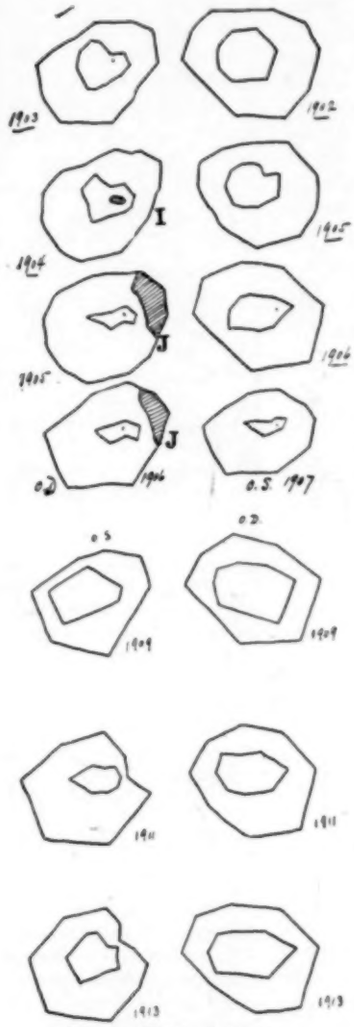


Fig. 9.—Fields of Case 9.

CASE 10 (Case 32 of 1908 series).—Man, aged 70, under observation ten years. Poor vision in right eye for some years past, following dynamite explosion. Vision of left eye totally lost at that time. O. D. V. worse past six months. Halos at times. Large glaucomatous excavation in right eye; anterior chamber shallow; pupil large; cornea maculated in pupillary area; T. +. Left eye, phthisis bulbi.

O. D. — S. 1. D. ⊃ — C. 1.5 D. ax. 180° = 5/9.

Seen at intervals of six months, miotics being increased from time to time. Now using pilocarpin, 3 grains to 1 fluidounce, 2 drops at night. During the ten years of treatment vision has practically held its own, that is, 5/15. There has been considerable loss in the nasal field, but the temporal field remains full.

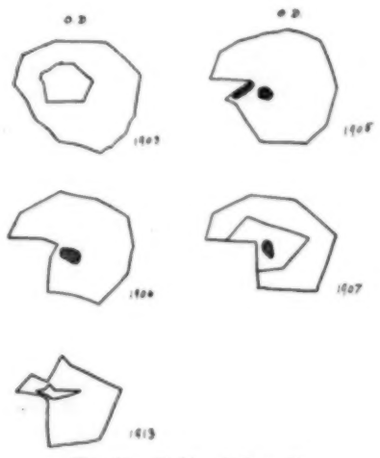


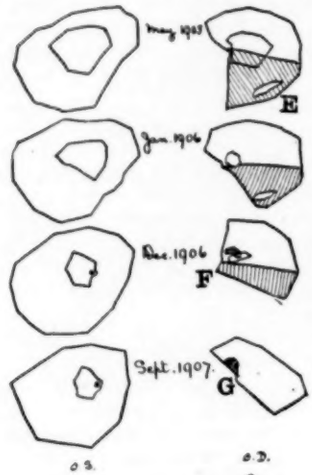
Fig. 10.—Fields of Case 10.

Remarks.—This result is exceptionally good, for the patient lives at a distance and cannot give so much care as is desirable to the conjunctiva. His health, too, has been bad, his vitality having been greatly lowered by repeated attacks of dysentery.

CASE 11 (Case 41 of 1908 series).—Man, aged 57, under observation eight years. At time of first consultation vision in right eye had been misty six months. Halos at times. Rheumatic history. Had been under ophthalmic care, but no miotics had been employed. There was a large glaucomatous excavation in right eye, with a shallower but also characteristic excavation in the left. Tension markedly elevated in both eyes. Anterior chambers shallow.

O. D. V. + C. 1. D. ax. 20° = 5/15.
O. S. V. + S. 0.25 D. ⌒ + C. 0.50 D. ax. 180° = 5/5.

Despite continuous use of miotics, vision gradually failed in O. D.; in 1909 to 5/35, in 1910 to 5/100, the reduction being occasioned by slight subacute exacerbations of the glaucoma. Operative interference rejected on account of hemorrhagic type of the disease. For the past two years the right eye has been practically blind. Vision in the left eye has been maintained at normal and the field of vision is normal. Tension, however, has increased and the cup has deepened.



Remarks.—Results from miotics disappointing in right eye, good in the left. Perhaps iridectomy in the right eye would have conserved vision longer.

CASE 12 (Case 19 of 1908 series).—Woman, aged 69, under observation seven years. At time of first consultation, right eye just recovering from an iridectomy which had been done by another surgeon on account of acute glaucoma. Shallow excavation in head of optic nerve, but eye quiet and no glaucomatous symptoms. Left eye free from glaucoma, save for a doubtful excavation to outer side of nerve. Anterior chamber in each eye shallow. Tn. Fields of vision normal in each eye. Gouty subject.

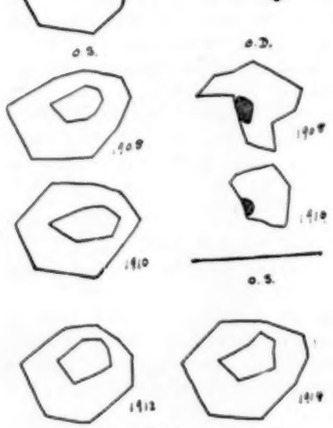


Fig. 11.—Fields of Case 11.

O. D. V. + S. 1.5 D. ⌒ + C. 1.75 D. ax. 160° = 5/5.
O. S. V. + S. 2.5 D. ⌒ + C. 0.62 D. ax. 90° = 5/5.

Glaucoma has made but little progress in either eye, as is evidenced by normal vision and fields. Miotic has been used in the operated eye as well as in the fellow, so that the maintenance of good vision in that eye may not be wholly the result of the iridectomy.

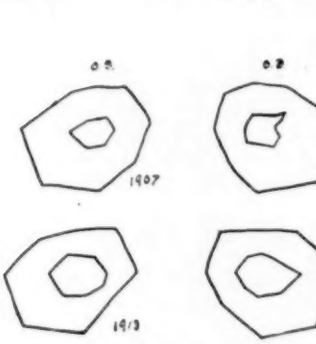


Fig. 12.—Fields of Case 12.

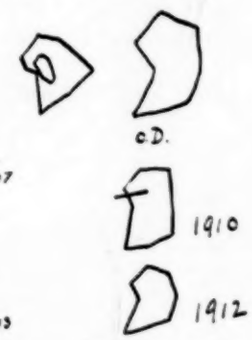


Fig. 13.—Fields of Case 13.

Remarks.—Despite glaucomatous outbreak in right eye, no glaucomatous symptoms have appeared in either eye, though a pathologic excavation has formed in the left eye, even though the pupil has been maintained at pin-point contraction.

CASE 13 (Case 54 of 1908 series).—Woman, aged 77, under observation six and one-half years. Poor health. Advanced vascular degeneration, vision in the left eye failing five years, in the right three years. Had never used miotics, though under the care of an eye specialist for five years. At time of first consultation:

O. D. + S. 0.50 D. ⌒ + C. 0.50 D. ax. 180° = 5/7½.
O. S. V. faint light perception only.

Observation of this patient continued over a period of five years following the last report, and notwithstanding her advanced age (77 years at time of last observation in 1912), very high intra-ocular tension, the conjunctival irritation excited by the mictics, and insufficient home care, vision in O. D. has been maintained to a most remarkable degree, namely:

1907: O. D. + S. 0.50 D. ⌒ + C. 0.50 D. ax. 180° = 5/6.
1908: O. D. — S. 0.50 D. ⌒ — C. 0.50 D. ax. 90° = 5/9.
1909: O. D. — S. 1. D. = 5/12.
1910: O. D. — S. 1. D. = 5/12.
1911: O. D. — S. 1.5 D. = 5/35.
1912: O. D. — S. 1.5 D. = 5/40.

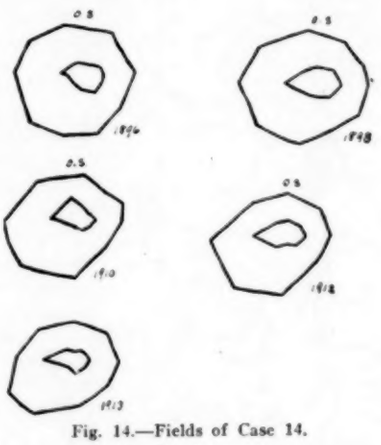


Fig. 14.—Fields of Case 14.

As shown by the accompanying sketch, the field of vision in the right eye was much reduced even at time of first examination.

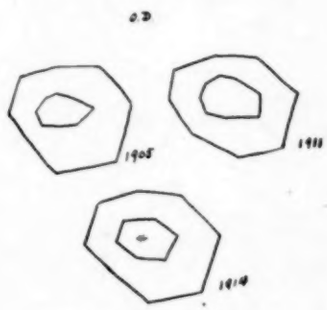


Fig. 15.—Fields of Case 15.

CASE 14.—Woman, aged 67. First consultation June 3, 1896.

O. D. V. reduced to 1/50.
O. S. V. — S. 1. D. ⌒ — C. 3. D. ax. 10° = 5/5.

Subacute glaucoma in O. D., deep cup. Commencing excavation in left eye. Iridectomy O. D., resultant vision of 2/40. O. D. totally blind two years after operation. O. S. V. now 5/7½ with — S. 0.75. D. ⌒ — C. 4. D. ax. 15°. Field somewhat concentrically contracted. Moderately deep cup. Tonometer = 38 mm. Hg. Pilocarpin has been used almost uninterruptedly during the past eighteen years, and despite the advanced age of the patient, vision is still almost normal and the field of vision fair.

Remarks.—In view of the loss of the right eye from inflammatory glaucoma, the control of the disease by miotics seems the more remarkable.

CASE 15.—Woman, aged 64. First consultation November, 1904. Poor vision in O. S. for five years. Examination showed O. D. to be normal, O. S., seat of subacute glaucoma of a hemorrhagic type.

O. D. V. = 5/5
O. S. V. = 5/35

Iridectomy O. S., with resultant vision of 2/60.

During the past five years the left eye has remained *in statu quo*, while the glaucomatous process has progressed though ever so slightly in the right. Vision is still normal

and the field of vision normal. During the last two years, there has been more or less irritation from the miotics, this condition being favored by a certain amount of obstruction in the lacrimal passages.

Remarks.—Notwithstanding the tendency to a hemorrhagic type of glaucoma, in the right eye, it remains practically unaffected, with normal vision.

Twenty-First and Chestnut Streets.

LATE INFECTION FOLLOWING A TREPHINING FOR GLAUCOMA *

E. V. L. BROWN, M.D.
CHICAGO

Just a year ago Wagenmann reported the first case of "late infection" following a sclerectomy operation for glaucoma. Since that time twenty-five observers have added thirty-eight cases, and Herbert says that the growing number of late septic infections in Europe is causing much concern. It is therefore a little surprising that only one such observation[1] has been published in this country and, believing that all allied observations on any new procedure should be published until its disadvantages as well as its advantages are thoroughly understood, I present the following case:

Patient.—W. G. F., aged 56. Vision in the left eye began to fail two years ago, in the right eye three months ago. Two months ago the left eye was entirely blind. Colored rings were seen earlier before the left eye and are now seen before the right. Lues was acquired twelve years ago.

Jan. 13, 1913: The right cornea and media are clear, iris normal, pupil 4 mm. and reacts sluggishly; the disk shows only a physiologic cupping. The retinal veins are dark and slightly tortuous. Tension normal to touch and 20 mm. Hg by the Schiötz tonometer. Right vision 3/10—1, not improved by his +1.D glass. Form field fully normal. The left anterior corneal stroma and epithelium are clouded, although the iris shows through; the direct and consensual reactions of the 4 mm. pupil are gone, the fundus gives a red reflex but no details. Tension + 1; Schiötz = 50-55 mm. Hg. No perception of light.

Physostigmin (eserin) instilled into the eyes for a few days narrowed both pupils to less than 1 mm. The further effect on the right eye greatly surprised me and proved that what I had considered to be a normal eye was in reality a glaucomatous one, for the tension decreased perceptibly to the touch and from 20 to 10 mm. according to the tonometer. The red field was now taken and found to be reduced to one-half, although the form field was normal, as before. The uncorrected vision improved from 3/10—1 to 6/10, and to 10/10 with his +1.D. The left cornea cleared and the disk was found to have a complete and total ampulliform excavation, all vessels disappearing beneath the overhanging scleral ring. Diagnosis: right and left simple glaucoma.

January 21: Trephine of the right scleral limbus with conjunctival flap and basal iridectomy.

February 7: Left subconjunctival injection of 4.5 per cent. sodium citrate to see if the tension would decrease.

February 8: Left tension not reduced.

February 11: Left tension not reduced (+ 3); cornea edematous. Physostigmin reordered.

February 12: Right tension normal to the fingers, cornea clear. The scleral limbus conjunctiva shows a 3 by 6 mm. flap-bleb straight up from the limbus between 10 and 12 o'clock. Vision, right + 1.5 = 8/10 — 4. Discharged with directions to continue the use of physostigmin in the left eye.

April 18: Patient returned twelve weeks after the operation, with the statement that three days before the right eye had suddenly become red and painful, the upper lid swollen, vision "foggy." The week before the patient had an acute cold.

Right eye: Photophobia, lacrimation and slight ciliary tenderness, marked ciliary and conjunctival injection, cornea clear. The site of the operation showed a yellowish, slightly elevated 4 mm. area between 10:30 and 12 o'clock. The anterior chamber was of normal depth, the 3 by 6 mm. coloboma above and the 4 mm. pupil area were filled with a cloudy exudate which obscured all view of fundus except for a small 0.5 mm. portion of the upper inner angle of the pupil, where a faint red reflex only could be seen. A hypopyon, 1 mm. high, 6 mm. broad, was present. The pupil did not respond to light or accommodation. The iris was dark green (left iris blue) and the vessels over the pupillary portion markedly injected. Tension 18.5 mm.

Diagnosis: Suppurative iridocyclitis.

April 19: Chemosis bulbi. Atropin revealed a brown posterior synechia at 3:15 o'clock and considerable exudate on the lens.

Five days later, under added heat, dionin and potassium iodid, the chemosis and pain were lessened and the hypopyon had entirely disappeared; a thick pad of spongy exudate almost completely filled the pupil area, the cornea was slightly clouded, lid edema marked, tension not increased. Synechiae going through all layers of the iris were found from 3 to 3:30 and from 8 to 9 o'clock.

May 10: Tension, increased for first time, not relieved by subconjunctive salt injection; anterior chamber everywhere abnormally deep; trephined area flattened. Vision, right 1/10. "Prognosis for vision bad."

May 17: Tension lower.

May 16: Vision, right 3/10; tension 40 mm. Left tension (physostigmin) 23 mm. Hg. Discharged.

SUMMARY OF CASE

An eye affected with simple glaucoma was trephined and the patient made an uneventful recovery. Twelve weeks later the patient returned with the statement that he had caught cold the week before and that the eye had become red and painful four days later. The conjunctival flap-bleb, which measured 4 by 6 mm., was yellowish and a severe suppurative iridocyclitis was present. Under treatment the hypopyon promptly disappeared and the uveitis got well in seven weeks, but a moderate increase of tension (40 mm. Hg) supervened and vision decreased from 8/10—4 (three weeks after the operation) to 3/10. The conjunctival bleb flattened down to the scleral level.

The case agrees in all essentials with those reported as "late septic infection" following sclerectomy and is therefore not worthy of extended summary and discussion. For a review of the literature the reader is referred to the article by Gifford.[2]

It is to be regretted that fluorescin was not used to determine the presence or absence of a defect in the conjunctival flap, as was done by Axenfeld and by Harms.

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* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Gifford: Ophth. Rec., January 1914, xxiii, 1.

2. This covers a wide range of experience in the hands of many competent observers and includes a discussion of the frequency of the infection, comparison between frequency after Lagrange's and after Elliot's operations, the interval, the influence of buttonholing the flap, the position of the trephine opening, the condition of the conjunctival bleb after operation and after infection, the factors of trauma, dacryocystitis and conjunctivitis, the use of fluorescin to detect a break in the flap, the relation of the pus beneath the flap to that within the eye, the resulting suppurative iridocyclitis and the course of the same, rises in tension, panophthalmitis, phthisis bulbi, sympathetic ophthalmia, histologic examination of the wound tract (Schur's case), Kuhnt's transplantation after buttonholing, cautery of flap, application of tincture of opium to toughen the flap, use of Roemer's antipneumococcus serum, etc.

The reports of cases published since the appearance of Gifford's article are those of Cramer, Herzau, Stock (second report), Bachstez, Herbert, Constantinesco and Pooley.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CALHOUN, PARKER, BROWN AND POSEY

DR. HIRAM WOODS, Baltimore: Modern medicine has put heredity into the background as the cause of disease. Numerous eye troubles show a greater or less tendency to run in families. Lattice-shaped keratitis, various lens troubles, certain forms of retinal and nerve disease, choroidal degeneration, myopia, all show hereditary tendency. Of some of these troubles, essentially degenerative, we know nothing concerning the exciting causes. Others are called into activity through something definite—infectious or otherwise—effective because of lessened tissue resistance. I have never made such observation as was narrated by Dr. Calhoun; but in two cases of glaucoma in young people, both more or less of the chronic type, there were unusual features, just as there are in Dr. Calhoun's cases. Circulatory or nerve disturbances, undiscoverable by ordinary means of diagnosis, had probably been at work before the period of hypertension. In Cases 2, 4 and 6 the essayist says the anterior chamber was "deep"; in Case 3 "very deep." Is there any significance in this symptom-complex—hypertension, deep anterior chamber and sluggish pupil? It leads me to suspect something else than glaucoma dependent on defective filtration; in other words, an indolent uveitis, with serous exudate and secondary hypertension. The mother in Case 2 had had pneumonia. Patients 3 and 5, both her children, developed tuberculosis after glaucoma symptoms. Do we know how old this infection was; how it had affected ocular nutrition; how nutritive disturbance might have brought about glaucoma symptoms? The same reasoning is applicable to the malaria from which most of them suffered. In other words, such cases take us beyond eye symptoms. We meet a problem which is becoming more and more absorbing—the biologic or biochemic factor in eye health. Heredity fixes only the tendency. Something else does the rest. Glaucoma is but a symptom, its essential being increased tension. As Fuchs explains, this depends on the relation of fluid formation to outflow. The chief anatomic changes are in the uvea. Engorgement of its vessels may exist a long time and escape detection. When it reaches a certain point, increased tension appears in an eye with a glaucomatous tendency. This may be due to inherited anatomic peculiarities. So we are forced back to defective filtration—the characteristic symptoms of which, except hypertension, were absent—or to the causes of uveal hyperemia. Inherited syphilis, infections, anomalies of metabolism, probably reflex nerve influence through the autonomic system—these are some of the things which can produce uveal circulatory disturbances, manifesting themselves all the way from functional derangement to glaucoma. We shall not understand such interesting observations until we know more about the nutritive effects of systemic exciting causes, not alone in the presence of degenerative, inflammatory or glaucomatous symptoms, but in functional anomalics as well. When there exists a family tendency, whatever its nature, this study becomes mandatory before the eye disease appears and should consist of careful search for, and, so far as possible, protection against anything known to affect eye health.

DR. JOHN E. WEEKS, New York: In determining the value of any operative procedure the careful analysis of cases with operation is essential until a very large number of cases has been so observed. Hence, we are much indebted to Dr. Parker for the compilation of the cases in which operation was done by Colonel Elliot while in this country, and the report of his own cases. With regard to the form of glaucoma for which this operation is adapted, the statistics of results by Elliott, Meller, Parker and others, indicate that the subacute and chronic forms in which simple iridectomy is least effective, are those more favorably affected by the Elliot procedure. In acute glaucoma, iridectomy, preferably performed after partial subsidence of the acute stage under the influence of miotics, laxatives and the salicylates, in the cases which can be influenced by these agents, is easier, is sufficient, and the subsequent condition does not admit of late infection. While it is applicable in some forms of secondary glaucoma, in hemorrhagic glaucoma and in buphthalmos the cases should be carefully selected. I am of the opinion that the 1 mm. trephine is too small, as it does not permit of the ready removal of iris tissue and of parts of the trephined disk that may remain. The 2 mm. trephine makes an opening that is often too large, permitting the prolapse of too much iris tissue, and not infrequently the prolapse of the anterior portion of the proximal part of the ciliary body and occasional subluxation of the lens into the opening. In my experience the 1.5 mm. trephine affords the best size opening for the majority of cases. Of course the size must be varied somewhat to suit the individual case.

While it is Colonel Elliot's custom to restore the flap without suture, my experience has been in favor of the use of the suture. In two or three cases the flap without suture has become bunched above the wound and has occasioned some discomfort to the patient. While the technic of the operation is not particularly difficult, in my hands iridectomy and the Lagrange operation are easier and the complications at the time of operation not more numerous. Of the subsequent complications that arise, iritis, hemorrhage, detachment of choroid, luxation of tissue into the wound, return of tension and late infection are the principal ones. Iritis, in my personal experience, has been very infrequent. I have employed the operation in approximately thirty cases. I have had iritis in three only and it was severe in but one. All who have studied the available statistics are aware of the fact that iritis is less frequent when the coloboma is complete.

DR. FREDERICK E. CHENEY: While a certain number of men have probably long appreciated the value of miotics in the treatment of glaucoma simplex, I think it safe to say that previous to Dr. Posey's first paper on this subject the attitude of the majority was one of considerable doubt and skepticism. Miotics, to be sure, were pretty generally used, but in a half-hearted "we must do something" fashion and the results were not as a rule satisfactory. Dr. Posey's carefully recorded cases most impressively emphasize the fact that surprisingly good results are often to be obtained if this treatment is intelligently and systematically used, day in and day out to the end of life. I fully agree with Dr. Posey as to the importance of "beginning in doses small enough to avoid creating a spasm of the ciliary muscle," though it is only exceptionally that I find it necessary to use a weaker solution of pilocarpin nitrate than 0.5 per cent. The fact must not be lost sight of, however, that, in exceptional cases, miotics tend to aggravate rather than control the disease, and it is therefore well to keep the case under careful observation until we have determined the dose that can be used without causing ciliary irritation. Another point made prominent in a certain number of Dr. Posey's cases is the value of treatment for eyes in which the disease has not become manifest. It cannot be too strongly insisted on that when a patient presents himself with glaucoma simplex in one eye and the other eye is free from the disease, the well eye should be as systematically treated and kept under as careful observation as though the disease already existed. In reply to Dr. Posey's question: In view of such favorable statistics from the use of miotics, when the risk and complication attending all operations on the eye are considered . . . is operation ever justified when both central and peripheral vision are normal without trial of what miotics can do? I must admit that in certain cases I am still favorably inclined to operation or at times operation plus miotics. The age of a patient is, it seems to me, one of the most important factors to be considered in this connection. In many cases beyond the sixtieth year we feel fairly confident that useful vision can be retained under miotic treatment until the end of life. If the patient is between 40 and 50, however, there is the probability of a much longer life, and other conditions being favorable, I am inclined to advise operation.

DR. W. E. GAMBLE, Chicago: Colonel Elliot operated on seven eyes for me before the clinical congress last year. While I have no final report to make on the results, I feel

that through courtesy to him I should make some sort of a statement at this time. Two of these cases were subacute. In the first case tension has remained normal since operation; the tension in the second case is and has been for some months 12 to 14 mm. These readings were, however, not made under an anesthetic. Finger palpation showed that the tension was below normal. I am uneasy about the final outcome of this case. The vision and fields remain the same as before the operation. Of the five cases of glaucoma simplex, one was complicated by trachoma. The conjunctival flap became very edematous, necessitating a stitch, which was made by my colleague, J. Brown Loring; however, no infection followed. There were no complications whatever in the other cases.

I wish to speak of one case in particular, a case of myopia complicated by glaucoma simplex in both eyes, the right eye having become blind from glaucoma. The case has been under observation since 1911. Miotics were used continuously, the tension gradually increasing up to the time of the operation. Dr. Elliot trephined with iridectomy. Tension has remained normal since the operation, so that I feel extremely grateful to him for the result. I am sure an iridectomy without the trephining would have been of no avail. I trephined an eye with acute glaucoma in which a large bleb formed. Two weeks later the tension went up and pain returned. The eye was massaged in the region of the bleb and I was gratified next day to find the tension down and pain relieved. I mention this, as in some of these cases adhesions about the filtrating area may be the cause of the increased tension, which may be broken up as indicated above.

DR. WALTER L. PYLE, Philadelphia: Before accepting the conclusions relative to any series of cases of glaucoma, I should, first of all, want a careful study of the clinical history in each case with a detailed description of the methods of diagnosis employed. It must be remembered that increased intra-ocular tension is not the only factor in glaucoma; and in some types it is of such little importance as to be negligible. Von Graefe and his successors did not advance operative means as curative or corrective in all cases now included under the generic name of "glaucoma." Primarily, iridectomy was recommended in cases of acute glaucoma and acute exacerbations of chronic glaucoma; and at present, it is an established fact that only in such cases may satisfactory results from operative procedures be expected. In many cases of so-called "chronic simple glaucoma," the main pathologic change is an advancing sclerosis of the optic nerve; and a study of the intra-ocular tension is of small importance beside that of the visual fields for form and color, the visual acuity and the ophthalmoscopic picture. The physical changes in the anterior chamber may be almost excluded as a causative factor; and for etiology, we must look to the biochemic changes that are commonly associated with arteriosclerosis elsewhere in the body. Of course, in such cases, operation is useless and often harmful. Reliance must be made on hygienic, physical and medicinal measures, both local and general. For the last fifteen years, I have found myself subconsciously dividing the cases of suspected chronic glaucoma under my observation into two general classes: (1) those cases in which palpation of the eyeball does not noticeably cause decrease of intra-ocular tension; (2) those cases in which, even during the brief testing of intra-ocular tension, the sentient finger-tips undoubtedly elicit decreasing tension. Since the general employment of the tonometer, this classification is confirmed. In the second class of cases, even the sustained pressure of the tonometer alone will show a gradual decrease from the initial record of intra-ocular tension. In the first class the register of intra-ocular tension does not appreciably vary with the time that the tonometer is left on the eyeball.

DR. JOHN GREEN, JR., St. Louis: A description of two unusual features presented by one of my patients operated on by Colonel Elliot may be of interest. Miss A. A., aged 40, glaucoma simplex, both eyes. Right eye vision 6/12, moderately contracted field with broad annular scotoma; central field not extending more than 10 degrees in any meridian. Scleral ectasia 3 by 6 mm. and 2 mm. high, 8 mm. up and out from corneal margin. Tension 40 mm. Hg. left eye, blind, large scleral ectasia up and out. Tension 70 mm. Hg. right eye trephined, without iridectomy (iris failed to prolapse). About the end of the first week the iris assumed a peculiar greenish-brown hue comparable to the tint of an iron-stained iris. No visible hemorrhage. The iris slowly regained its normal color and at the end of six weeks was of the same tint as the iris in the other eye. I presume the discoloration is to be accounted for by staining from a minute-deep hemorrhage. The second point of interest is that the scleral ectasia gradually flattened and eventually disappeared. Six months after operation vision 6/16, tension 15 mm. Hg.

DR. LUCIEN HOWE, Buffalo: Dr. Calhoun referred to the family which I reported several years ago. I have since seen other members of the family and it has been charted down to date, with five members of the fourth generation. A family like that may seem at first to be unique. In looking into the literature I found that Love of St. Louis has tabulated these cases. On looking up his cases I was much interested to see the importance of the subject, which accords with the importance of the general subject heredity as it has developed during the last five years. I think there were eight cases in the series of glaucoma pigmentosa, which is a most remarkable condition. Those having their etiology in the condition of the muscles were very interesting. One was a nystagmus. Especially important is the sex tendency. We know that color-blindness is not only hereditary, but also goes down the male line, being frequently most marked in the first male child. The cases reported by Norris I think are the same as those of Leber, but in them also there is that same tendency to sex selection which was recently mentioned by Dr. Davenport. The study of heredity in connection with eye diseases is one direction in which ophthalmology is to advance.

DR. G. E. DE SCHWEINITZ, Philadelphia: My experience with the Elliot operation comprises about thirty operations for absolute glaucoma secondary to intra-ocular hemorrhage; glaucoma after extraction of cataract; in association with swelling of a cataractous lens; acute; ordinary chronic; subacute or chronic congestive; associated with corneal lesions, for example, staphyloma and absolute glaucoma. The technic of Elliot was exactly followed and the Stephenson trephine was used, except in one case in which the von Hippel instrument was used. I have never observed extensive hemorrhage into the anterior chamber nor purulent infection in my own cases, but have seen an infection a month or six weeks after an operation by another surgeon. Iritis occurs with irritating frequency (Colonel Elliot admits this) either in the form of a quiet iritis, with the gradual development of soft synechia, or as a sharp, ordinary plastic iritis arising at longer or shorter intervals after the operation. The cause of quiet iritis is not known: it may be due to some toxic property which the aqueous humor begets; evidently the later iritis is due to filtration of contaminated conjunctival fluid. Unless the pupil is dilated, as advised by Elliot, mydriatics should be used early. He advised atropin. I prefer scopolamin or homatropin. I am unconvinced that corneoscleral trephining is a better operation in acute primary glaucoma than a technically correct iridectomy; it is superior to the usual iridectomy in chronic non-inflammatory glaucoma, and if iridectomy fails in this disease is better than an additional iridectomy; it appears to be safer in chronic glaucoma with greatly contracted visual field than iridectomy; it is not a wise operation in glaucoma complicated with cataract, but should be thought of in glaucoma secondary to cataract extraction; it is a proper operation in absolute glaucoma but success cannot be promised; it may be repeated in the hope of preventing enucleation; it is not satisfactory in glaucoma due to thrombosis of the central vein of the retina and blindness as the result of this form; it may be tried in staphyloma with secondary glaucoma, but the outlook is not brilliant. Not alone reduction of tension, but the preservation and the restoration and the improvement of visual acuteness and the widening of the field of vision should be given prominen,

place as standards in the estimation of the efficiency of the operation. The danger of prolonged hypotony must be considered.

DR. MELVILLE BLACK, Denver: My personal experience with the forms of glaucoma of the inflammatory type have led me to be a firm supporter of this operation. I have been doing it for the last three years, and I have had no failures. I am more than pleased with it from every possible point of view. During this time I have seen very few cases of glaucoma simplex, and these have been handled entirely by miotics. I use the von Hippel trephine exclusively. It seems to me to be much safer than any instrument that can be devised. It is quick, accurate, and in my hands most satisfactory.

DR. M. H. LEBENSOHN, Chicago: My personal experience with scleral trephining is undoubtedly much better than with simple iridectomy, although I have to report one case of detachment of the choroid which occurred in my own practice, and one case that was reported to me by Dr. E. V. L. Brown of Chicago. To my mind the scleral trephining is the safer operation with less likelihood of injuring the lens than by iridectomy. Colonel Elliot, when in Chicago, insisted that it is not necessary to do an iridectomy. It should be done only when there is prolapse of the iris. In every case in which you do a peripheral, or a technically correct iridectomy, as Dr. de Schweinitz says, you will be successful. I exhibited before the Chicago Ophthalmological Society a man on whom I had operated for cataract with excellent results following the extraction. A few weeks later he developed glaucoma which ran on for four months. The tension was finally reduced to 52 mm. Scleral trephining with iridectomy brought the tension down to 42, which was normal in his eye. Ten days later he had detachment of the choroid, but recovered from it, and his vision, which was 20/15 after the extraction, has remained the same. In from twelve to fifteen cases the results have been good, except in one case of buphthalmus in a child. In one eye the tension came down after scleral trephining, and went up two months later. This is the only case in which the tension did not stay down to normal. I have had these cases under observation for from six months to a year. Every case of postoperative glaucoma was combined with a broad iridectomy. An iridectomy of two-fifths or half the circumference may be done and still the tension may remain high; but my opinion is that scleral trephining is the operation of choice, in the postoperative cases undoubtedly, and in most cases.

DR. W. GORDON M. BYERS, Montreal: I have not tabulated the cases, but I can say that we have operated at the Royal Victoria Hospital at Montreal during the last three years on some fifty-three patients by Colonel Elliot's method, and the statistics go to show that our results are essentially in agreement with those tabulated by Dr. Parker. We have had no case of late infection, although I think, through one of our assistants who has followed all the cases carefully and also by our close surgeon, we have cognizance of all the results up to date. One practical point in connection with this, a minor point, which may happen to operators, is the tearing out of the flap. I have not heard anyone speak of that today. In the two instances in which I have seen that occur it has been due to the common practice of knotting the suture. I think, as a suggestion, that if the needle is simply threaded and put through this accident is not likely to occur. I prefer to replace the flap and let it go without any threading.

DR. ALLEN GREENWOOD, Boston: When first trying Colonel Elliott's operation the suggestion was followed that if the conjunctiva only was separated without lifting up the subconjunctival tissue a more permanent opening was likely to result, it being thought that if the subconjunctival tissue was incorporated with the conjunctival flap it was likely to fill the opening with new connective tissue and thus prevent filtration. Last February one of my patients, who had had a double trephining the previous October, developed an attack of acute conjunctivitis followed by a panophthalmitis in the poorer eye. In other words, one of the cases of late infection came to me, but fortunately the other eye is still good. This patient had a thin, watery-looking bleb over the sclerocorneal opening, and since the disturbing occurrence mentioned I have tried to incorporate in the conjunctival flap all the subconjunctival tissue possible and separating the layers of the sclerocorneal corona fairly deeply; preferring to run the risk of a second trephining in a few years rather than the risk of a disastrous late infection which in my opinion is much increased by a very thin conjunctival covering. Lately I am advising my patients to use a weak zinc solution daily to help prevent late infection. I was very glad to see Dr. Parker's table as to the results of the complete iridectomy which for the past year I have urged on my students and those associated with me. Dr. Standish at a meeting of the New England Ophthalmological Society also strongly urged a complete iridectomy. I am positive, as Dr Parker's statistics show, that complete iridectomy is the thing to do. It can be performed easily through a 1.5 mm. opening. I have used that in all cases but one, in which I used a 2 mm. opening. With regard to glaucoma secondary to complete thrombosis of the vein, I reiterate what I said at a former meeting, that in my opinion any operative procedure is contra-indicated.

DR. E. C. ELLETT, Memphis: I would like to refer briefly to the demonstration so widely made by Colonel Elliot to show that actual filtration was going on in operated eyes. By pressing on the eye with a probe just above the sclerocorneal junction a pitting could be observed. As a matter of fact, every eye, glaucomatous or non-glaucomatous, operated or not operated on, will pit there in exactly the same manner. I have spoken of this matter to a number of men of keen observation who have thought I was mistaken. I am encouraged to make this statement by the fact that some one has just told me he had tried this on 300 consecutive cases, regardless of what was the matter, and the pitting was observed in every one.

DR. L. WEBSTER FOX, Philadelphia: I wish to confirm the opinion of Dr. Posey that miotics are of great value in the preliminary stages of glaucoma, but I have found whenever the fields of vision are contracting and the tension is increasing it is time to discuss operative measures with your patient. That may be in three months or three years. We all have had cases that continued over a long period of time, eventuating in blindness if only miotics are used. There is a certain physical condition that enters into this eye-tension that shows itself through the system, whether auto-intoxication or arteriosclerosis, it is impossible to say; but the determination of that condition is evidenced by highly increased tension and contraction of the field of vision. As regards corneoscleral trephining for glaucoma, Colonel Elliot's operation is going to save the eyes of many people. Is his operation to be followed by the majority of operators? I followed him, saw his work in England, and traveled with him to Washington and Baltimore, and in my own clinic, I saw thirty operations performed by him, and it is a difficult operation.

Great success has undoubtedly followed the performance of the various newer operations for chronic glaucoma, but none of them has given me greater satisfaction than the Elliot trephining of the sclera. As already stated, Colonel Elliot makes the basis of his triangular flap at the sclerocorneal margin, but now I have reversed this practice, and as in the Van Lint sliding-flap operation for cataract, I seize with the forceps the conjunctiva on the inner side of the right cornea, about 4 mm. below its summit, and dissect it around the upper corneal margin of the outer side; then with scissors I detach the conjunctiva from 12 to 14 mm. upward. A suture is next inserted in the loosened conjunctiva at the lowest point of the inner side. From this point I make a perpendicular incision of 4 mm. through the conjunctiva, which is continued diagonally upward and outward to a similar distance. When operating on the left eye I begin the dissection of the flap on the outer side of the cornea and make similar perpendicular and diagonal incisions upward and inward. When completed the flap is drawn over to its attached side on the eyeball, leaving a space for the trephining along the upper sclerocorneal margin.

After the trephining the conjunctival flap is replaced and by means of the suture already inserted, it is drawn downward to cover the hole in the sclera and the upper part of

the cornea. From time to time I have modified the treatment of the conjunctival flap, at one time stitching it down on one side and removing the thread at the end of twenty-four hours; at another, simply loosening the conjunctiva over the corneoscleral opening and allowing it to heal, then again carrying out Van Lint's sliding flap, that is, stitching the conjunctiva on both sides of the cornea.

DR. W. E. LAMBERT, New York: My experience with regard to these operations entirely coincides with the views expressed by Dr. de Schweinitz. I employed the Elliot operation under protest in one case only of acute glaucoma, as I still prefer an iridectomy in acute cases. A physician had lost one eye, and had had repeated attacks of glaucoma in the other, controlled previously by miotics. Finally these attacks occurred so frequently and the condition became so serious that an operation seemed to be demanded. After consultation I advised iridectomy or a Lagrange operation. He, however, insisted on the Elliot operation, and it was done with a perfectly satisfactory result. His vision had been reduced to 20/100. He recovered 20/30 vision, and the tension has never increased since the operation five or six months ago. Two cases of hereditary glaucoma, which are not of particular interest as hereditary cases, as they were of the second generation, have a decided interest as bearing on the paper of Dr. Posey. The first was in a young man aged 25, first seen two years ago. Vision in each eye then, 20/20, with unmistakable evidences of chronic simple glaucoma—increased tension, contracted fields, deep cupping —and an operation was decided on. A Lagrange operation was done on the poor eye, and was particularly satisfactory. The vision and tension remained normal during some weeks of observation, miotics being used in the eye not operated on. The patient disappeared. Two months ago he reappeared, with the story that he had continued the drops in his eye more or less frequently. Vision in the operated eye had commenced to fail six months previously and gradually became worse. When I saw him it was 20/100. The other eye had remained the same as two years ago. In the eye operated on, the tension had increased to 50 and I did the Elliot trephining operation. The vision, however, has not improved. The other case was one of hereditary glaucoma in a woman aged 25. The fields were normal, or slightly contracted. Operation was advised, but was not accepted. The patient has been kept on miotics and vision in both eyes has remained practically the same during the past year.

DR. F. PHINIZY CALHOUN, Atlanta, Ga.: I am glad to have Dr. Woods correct the misstatement made in the paper with regard to the depth of the anterior chambers. I meant to leave the impression that the anterior chambers were not shallow. They were quite deep. Dr. Howe's case seen recently in the fifth generation is the only case that goes beyond four generations in glaucoma simplex.

DR. WALTER R. PARKER, Detroit: Case 27, the last reported in my paper, was one of glaucoma simplex and had been under miotics for three years, but in spite of their use the process had continued and I did a trephining operation last November. The vision before operation was 6/9, with correction. The operation seemed to me to be technically correct. The chamber remained open nineteen days. In spite of atropin used after the third day the pupillary space filled up with exudate and vision was reduced to objects. The patient was subject to mild exacerbations. In February I did a deep iridectomy on the other eye. Vision in the iridectomized eye has remained and the process has apparently stopped. In connection with Dr. Posey's paper I wish to report one case without operation under observation for twelve years. Twelve years ago the patient had a simple chronic glaucoma. I advised the use of miotics and after two years' time, the fields being more contracted, I advised an iridectomy, which was refused. She has used miotics faithfully all these years and although the field is somewhat more contracted she has a control vision of 6/6 and the eye seems to be in good condition. Miotics should not be used except in cases which can be kept under close observation. The danger is that they may be used for so long a time as to lose the best opportunity for surgical interference. In view of the good effects occasionally gained from miotics, the difficulty of doing complete iridectomy through a trephine opening, the many good results from iridectomy and the fewer cases of iritis following in the cases in which the iridectomy is complete, it seems to me a fair deduction would be as follows: 1. Use miotics as long as the field is kept under control. 2. Following this a deep iridectomy, the earlier the better after miotics have failed. Continue the miotics after iridectomy. If this fail, then do a sclerocorneal trephining operation over the site of the coloboma. I believe that Colonel Elliot has made a valuable contribution to the treatment of glaucoma in his sclerocorneal trephining operation.

DR. E. V. L. BROWN, Chicago: I would like to refer to Dr. Cheney's case with tension of only 22 mm., and yet a glaucomatous state. The one I have just reported with late infection is also of this type, but you will note that physostigmin lowered the tension to 10 mm., and since it is known that physostigmin never lowers normal tension, it must follow that 20 mm. is for this eye a pathologic tension. I would assume that a low-grade iridocyclitis had preceded and left the eye with a tension of 10; that when obstruction of outflow occurred, with a rise to 20 mm. I think many cases of so-called primary glaucoma are in reality secondary. Has Dr. Posey definite data showing how long it takes tension of say 20 to 30, 30 to 40, or 40 to 50 mm. to develop a definite glaucomatous cup and to narrow the field and lower the vision? Since he is able to study these cases through long periods the data could be gotten together. If we are going to give up the Elliot or other operations and use only miotics, I think we should get information as to what the effect of a given tension is.

DR. W. C. POSEY, Philadelphia: In this last paper I have not attempted to make a comparison of the results following the use of miotics and those attained by operation. In a paper before the Section in 1908 I showed the results obtained were better than those by iridectomy. My opinion is that we cannot say anything about the trephining operation for four or five years; then we may be able to say that the results are as good as or better than those obtained by a simple excision of the iris. In answer to Dr. Brown, I would be able to give such figures in a few cases, but the cases which I have reported have all been from my private practice and I find I have to be careful how I use the tonometer in this class of cases. Patients beg off from it. It is not easy to get patients to remain under any one form of treatment a long while unless you convince them that unless miotics are used four times a day religiously for the rest of their days they are going to lose their sight. It is after all the vision and the field of vision that we want to conserve; it is not so much the tension that we have to think of, because, as we all know, we may have pronounced glaucomatous symptoms in eyes in which the tension is comparatively low. I feel myself that if one is going to operate, this should be done early. I operate on all my hospital cases for you cannot trust hospital patients to carry out the miotic treatment. I advise an immediate operation of some kind, the earlier the better. If a patient comes to you in advanced years with a small field and you employ miotics the chances are that the patient will see almost as well for the rest of his days. But if you operate by trephining, iridectomy or cyclodialysis, that little field may be wiped out. I advise caution in these desperate cases. Dr. Cheney has asked the question, What are we going to do with a patient of 25 or 30 years with a deep cup and a high tension? These cases are rare, but they do come to us for treatment. Will you ask that patient to use miotics the rest of his or her life? Shall we bore a hole in the sclera, subjecting the eye to danger, or shall we do an iridectomy? I believe the best thing to do in such cases is iridectomy plus miotics.

It is Not Confined to Austria and Germany.—"It has become quite a custom in Austria and Germany for a medical periodical desirous of obtaining advertisements from pharmaceutical firms to offer to produce the necessary medical papers and articles extolling the different possibilities and uses of the remedy under consideration."—London *Pharmaceutical Journal and Pharmacist.*

GRANULOMA ANNULARE

A REPORT OF FIVE CASES *

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Although the credit of having first described this affection is usually, and properly, ascribed to Colcott Fox who, in 1895, reported a case under the name "ringed eruption," the first case to be found in dermatologic literature is probably the one reported by Radcliffe Crocker a year previously as a case of erythematous lupus resembling lichen planus. Crocker soon recognized his error after seeing other cases, and proposed the name "granuloma annulare," by which it is generally known at present among English and American dermatologists.

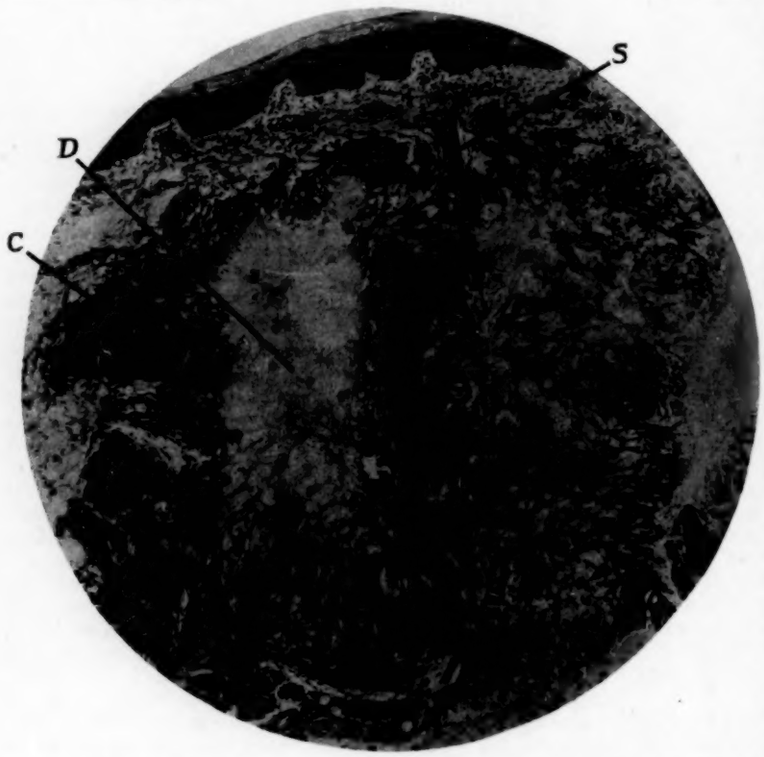

Fig. 1.—Granuloma annulare; section from Case 1; *C*, cell infiltrate; *D*, central area of necrosis; *S*, excretory duct sweat-gland.

Like so many other cutaneous affections, this one has suffered from a veritable plague of names. Ringed eruption, *éruption circinée chronique de la main*, lichen annularis (a most unfortunate name, leading to confusion since it has been already used to describe a variety of lichen planus), sarcoid, benign sarcoid, *néoplasie circinée et nodulaire, érythémato-sclérose du dos des mains, stéréo-phlogose nodulaire et circinée*, helodermia simplex et annularis are some of the names given to the malady by as many authors. The name proposed by Crocker, while not free from criticism, is descriptive, and seems in a fair way to be accepted by the majority of writers.

Although the affection is usually described as rare, Graham Little in an exhaustive paper published in 1908, had collected reports of not less than forty-nine cases, including six of his own, observed by various authors in a period of less than fifteen years; and since the publication of this paper a considerable number of additions to this list have been made by European and American observers. In view of the number of cases now on record, all of them reported within a period of twenty years, it can no longer be properly described as a rare malady. In all probability too, the reported cases by no means represent the frequency of its occurrence since, owing to the usual complete absence of annoying symptoms and the frequent insignificance of the lesions, many cases doubtless never came under the notice of a physician.

Case 1.—The first case which came under my observation occurred in the person of a girl, aged 17, who was brought to me a number of years ago; and I may say at once that it remained for a considerable time among the unclassified cases in my index. On the back of the right hand, and the dorsal surface of the index, middle and little fingers, were a number of shot to pea-sized, firm, whitish nodules, some of them isolated, others arranged in a circular patch. The nodules composing the circular patch which was situated at the base of the index-finger, were arranged about the border of a dime-sized cicatrix which had followed the destruction of a number of the lesions by a caustic of some sort applied by the patient's former medical adviser. The single lesions were the size of a split pea, were scattered about without any particular arrangement, and were situated almost without exception over the joints of the fingers. The disease had existed for two years, new nodules appearing from time to time, usually, but not always, in the neighborhood of the old ones which had been destroyed. Although the condition was not spontaneously painful, the patient complained much of pain if the nodules were pressed on. During the next nine months new lesions, usually single nodules, continued to appear as before, and occasionally one disappeared spontaneously. A considerable number were excised and several were destroyed by a pyrogallol plaster; at the end of another six months the disease had completely disappeared having lasted altogether about three years.

Case 2.—Anna K., aged 14, came to the skin dispensary of University Hospital in November, 1909, for advice concerning a cutaneous affection consisting of circinate patches made up of small firm, whitish nodules situated on the backs of the hands, one patch on each hand. The right-hand patch, situated over the knuckle of the index-finger formed a complete circle to which was attached a curved line about half an inch long, made up of discrete and confluent nodules; the patch on the left hand was semicircular, and was situated over the knuckle of the middle finger. The disease was not accompanied by any annoying symptoms, and had lasted about one year. After five Roentgen-ray exposures of from five to seven minutes' duration, the patch on the right hand had completely disappeared, and a similar result followed four exposures of the left-hand patch.

Case 3.—May L., aged 3, also a patient in the University Skin Dispensary, had six or eight finger-nail-sized annular patches composed of small, solid, pinkish nodules, scattered over the arms, abdomen and legs. These patches, some of which showed signs of involution, had been present for two years. The child was apparently in perfect health, and was in no way incommoded by the affection. Special inquiry was made concerning the presence of tuberculosis in any member, near or remote, of the patient's family, but the his-

* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

tory was entirely negative in this respect. After a few visits to the dispensary the child was lost sight of, and the further history of the case is unknown.

CASE 4.—Miss B., aged 24, who was referred to me by her family physician, for two years had had a number of dime to dollar-sized nodular, ring-shaped patches situated on the back of the left hand, the flexor surface of the left wrist, both elbows and the outer side of the left ankle. All these patches, with the exception of the one on the left elbow, were made up of small bright-red, quite solid, well-defined nodules; but the nodules in the patch on the left elbow were of a dull violaceous hue, quite deep-seated, much less well defined than those in the other patches, and quite as large as small peas. Although the eruption was not accompanied by any troublesome symptoms, the patient was greatly annoyed by its presence and was extremely anxious to have it removed. After a year of somewhat indifferent treatment under her family physician but little change had taken place except that the patch on the left elbow had lost its violaceous color, being almost the color of the normal skin, and the nodules composing it were much more sharply defined than formerly. Roentgen-ray treatment was now begun, and after six or eight exposures the patch on the back of the hand had almost completely disappeared and the one on the elbow was undergoing involution. As it was extremely inconvenient for the patient to continue under my care owing to the distance at which she lived from Philadelphia, she was transferred to a physician nearer her home who was to continue the treatment. What the final result of the treatment was I have not learned.

CASE 5.—In all the preceding cases the annular disposition of the nodules making up the patches was one of the most striking clinical features, although there were single nodules as well as rings in the first case. In this case, which occurred in a boy aged 6, a patient in the University Skin Dispensary, there were neither rings nor nodules, but flat, irregularly shaped and oval, pinkish plaques varying in size from a finger-nail to a Lima bean, situated on the back of the neck, the back of the hand and on the outer side of the right leg. These plaques, which were unaccompanied by any subjective sensations, had appeared rather suddenly about six weeks before the patient's visit to the dispensary. A diagnosis of erythema elevatum diutinum was made, as the case corresponded closely in its clinical features with the disease described by Crocker under that name; but the microscopic examination of an excised lesion at once made it apparent that the affection was histologically at least, identical with granuloma annulare, and it is for this reason included here. As the patient ceased attendance at the dispensary after two or three visits, the further course of the case is unknown.

Microscopic examination of several of the discrete nodules and a portion of the annular patch removed from the hand of the first case showed that the pathologic alterations were confined exclusively to the corium. Beginning in the subpapillary portion and extending down to the hypoderm was a moderately dense, fairly well-circumscribed cellular exudate composed chiefly of lymphocytes and spindle-cells of the connective-tissue type with a few polymorphonuclears and some large epithelioid cells. The exudate was densest about the vessels and the coil-glands and their ducts, the cells being especially numerous in the latter situation. Neither giant- nor plasma-cells were seen in any of the many sections examined. The most striking feature, however, was an area of necrosis occupying the central part of the exudate from which all traces of cell-elements had disappeared, and about which were numerous oval and spindle-cells arranged in radiating lines. This necrotic area was present in every section of every lesion examined, the area involved being apparently in proportion to the age of the lesion, since in lesions a few weeks old it was quite small. The elastic and collagenous tissues were apparently but little affected except in the areas of necrosis where the former had entirely disappeared and the fibers of the latter had lost their sharpness of outline, were granular in places, and stained poorly.

As already mentioned, sections were also made and examined of the plaque on the back of the hand of the case in which a clinical diagnosis of erythema elevatum diutinum had been made. The most cursory examination of these sections showed that the histologic features of the lesion were practically the same as those observed in the ringed lesions of the first case: there was the same perivascular and periglandular cellular exudate composed of round cells and spindle-cells, and the same central area of necrosis, although this was much less in extent than in the sections made from the first case, owing doubtless to the much shorter duration of the lesion, which was only a few weeks old. There was one notable difference, however, and that was the presence of many small

Fig. 2.—Granuloma annulare in Case 2.

mast-cells, a variety of cell not seen at all in the first case.

A few words as to the relationship of this very interesting neoplasm to other affections.

The case reported by Rasch and Gregersen, in 1909, was regarded by them as a new type of sarcoid tumor; and Galewsky likewise described the case which he reported in the third fasciculus of the Ikonographia Dermatologica with an excellent colored portrait, as benign sarcoid tumor of the skin. Later observers, however, are practically in accord in rejecting this view of the character of the affection; indeed, its histopathology leaves but little doubt that it is in no way related to the malady described by Boeck as sarcoid.

Graham Little, to whose exhaustive study of the malady I have already referred, is strongly of the opinion that it is in some way closely related to tuberculosis, but the evidence which he presents in support of this opinion is far from conclusive; indeed, it seems to me quite the contrary. In only four of the forty-nine cases, reports of which were collected by this

author — or in five out of fifty if we include a case presented later at a meeting of the Dermatological Section of the Royal Medical Society — was there a history of tuberculosis in the patient's family, and in but a single instance did the patient himself present signs of tuberculosis.

The observations of Wende, Graham Little and my own more recent study have quite convinced me that the so-called erythema elevatum diutinum of Crocker is simply a clinical variety of granuloma annulare; histologically, there is no essential difference between the two affections.

As to the essential nature of this curious malady, little or nothing definite is known. The objection which has been made to the name "granuloma annulare" that it is not a granuloma, is apparently supported by its histopathology, which is much more that of a connective-tissue neoplasm than of a granuloma. Some observers, it is true, have found plasma and giant-cells, usually in very small numbers, but this finding is decidedly the exception rather than the rule. Halle thinks it a chronic inflammation of the middle and deep portions of the corium, while Dalla Favera believes it dependent wholly and alone on the blood-vessels; none of these views, however, explain in the least the peculiarities of the neoplasm. My own belief is that it is an affection *sui generis*, not related, so far as our present imperfect knowledge permits us to form an opinion, to any other. As to its etiology we cannot furnish even a reasonable conjecture.

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ABSTRACT OF DISCUSSION

Dr. Charles J. White, Boston: One case of granuloma annulare which I had the pleasure of studying proved rebellious to many sorts of medication, but yielded to the Roentgen-ray treatment, unfortunately, however, only to recur in a few weeks.

Dr. A. Ravogli, Cincinnati: I have never seen a case of typical granuloma annulare in this country. I can recall a few cases in Italy; in those the lesions were typical, being limited to the hands and the fingers, in form of rings, near the joints, and giving rise to no itching nor other discomfort. I am inclined to regard this eruption as a localized lichen planus rather than to associate it with lupus erythematosus, tuberculosis or sarcoid. It is exceedingly stubborn, and I know of no remedy that will permanently relieve it. The Roentgen ray may hide it for a time, but there are cases in which it may aggravate the trouble.

Dr. Frank E. Simpson, Chicago: I have seen one case of this affection with Dr. Joseph Zeisler, which disappeared, apparently permanently, under the use of carbon dioxid snow.

Dr. Frank W. Gregor, Indianapolis: Before listening to Dr. Hartzell's paper, I had almost come to the conclusion that granuloma annulare was not a dermatologic entity. Of two cases I can recall that were regarded as examples of this affection, one proved to be a case of syphilis; the other a case of lichen ruber planus in which I was subsequently able to demonstrate the typical lesions of that disease on the buccal mucous membrane.

Dr. Richard L. Sutton, Kansas City: I have under my care a case of granuloma annulare in a girl, 2½ years old, who instead of improving under Roentgen-ray treatment, grew distinctly worse. I then tried the carbon dioxid snow, without knowing that Dr. Simpson had previously employed it in this affection. The results apparently, were very good, but it is still too early to make any definite statement concerning the final outcome.

Dr. M. B. Hartzell, Philadelphia: Of course, an experience with only two cases does not prove very much. In one the lesions disappeared absolutely and did not return. It should be borne in mind, however, that these lesions sometimes disappear spontaneously, but in this instance it followed so promptly after the use of the Roentgen ray that the patient could but attribute it to the treatment. These lesions show a certain predilection for the neighborhood of the joints. The eruption is most common in children, and occurs most frequently on the hands, particularly about the knuckles. As to its relationship to tuberculosis, I think that is a purely gratuitous assumption which is entirely negatived by the histologic picture. To repeat, I regard it as a disease *sui generis*.

THE PINEAL GLAND IN RELATION TO SOMATIC, SEXUAL AND MENTAL DEVELOPMENT *

CAREY PRATT McCORD, M.D.
DETROIT

From tumors involving the pineal gland, two distinct systems of symptoms and signs ensue, the neurologic and the metabolic. The neurologic manifestations arise from the encroachment of the neoplasm on the intracranial contents and are indications of changes in pressure, in placement and of destruction of tissue. Such changes are the consequence of pineal tumors at any age of the patient; but in pineal tumors appearing in prepuberal life a second group of changes arise, the metabolic. These metabolic alterations are referable to disturbance in the gland's secretory function. Apparently only in young males is this syndrome complete.[1] It consists of (1) early sexual development evidenced in the enlarged sex organs, pubic hair, general body hair, early changes in voice; (2) precocious mental development evidenced in the maturity of thought and speech, and (3) general body overgrowth to the extent that a child of 5 or 6 years may have the appearance of a child of 11 or 12.

A case reported by Machell[2] presents these changes in a striking manner. The patient was a boy less than 6 years old at the time of the publication. At the age of 5 months there was pubic hair, erections at 17 months, emissions at 30 months. The patient's weight was 7½ pounds above normal at 4 months of age, 12 pounds in excess at 8 months, 20 pounds in excess at 3 years. When the patient was 44 months old, his height was 8½ inches above normal for a child of that age. At 48 months the circumference of the head was over 2 inches in excess of normal. The voice was a deep bass. Mental precocity was very marked and the general bearing and language was that of a much older person.

On account of the difficulties attending experimentation on this vestigial organ, the clinical findings with subsequent necropsy records have been the prime factor in the formulation of the prevailing ideas as to this gland's functions. The conception of this gland's function, however, has in part been developed from laboratory studies, notably from the results concomitant to the extirpation of the organ. This has been attempted frequently, but the situation of the gland is such that in the greater number of instances death followed the operative procedure, from hemorrhage or injury to the vermis or the occipital lobes. By operating on a large number of animals some workers have had a few animals survive. No changes attended the

* Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. For review of clinical cases see Bailey, Pearce, and Jelliffe, Smith Ely: Tumors of the Pineal Body, Arch. Int. Med., December, 1911, p. 851. For Physiology and Anatomy, see Vincent Swale: Internal Secretion and Ductless Glands, 1912.

2. Abstract taken from Medical Chronicle, 1912, lvii, 154.

removal of the gland by Biedl,[3] Dandy[4] and Exner and Boese,[5] but Foa[6] ablating the gland in chicks and Sarteschi[7] in young rabbits and puppies report the production of the precocious macrogenitosomatic syndrome.

The publications growing out of these several clinical and laboratory studies have given rise to conceptions of this organ and its functions that may be thus epitomized:

The pineal body (epiphysis cerebri), probably the remains of a parietal eye, is situated just beneath the splenium of the corpus callosum, resting on the anterior quadrigeminate bodies, and is attached by its base to the habenular commissure. The gland varies in size, shape and pigmentation and does not stand in any proportional relation to the size of the brain or size of the body. The pineal body contains glandular elements, but these are few and not well defined. The greatest postnatal development is in the first years of life, and as far as is known the gland is only functionally active in the prepuberal life. On the assumption that tumors destroy the gland and deprive the body of the substances generated by it, the function of the gland is generally described as retarding and holding in abeyance too rapid development in childhood, of the body, mind and sexual characteristics. When precocity in development appears in conjunction with pineal tumors, it is attributed to lack of glandular secretion.

Below are recorded some findings from experimental work that are entirely in accord with the results obtained by Dana and Berkeley.[8] Contrary to the view that precocious development is due to pineal deficiency (hypopinealism) the same precocity in development has been brought about by the oral administration of pineal gland tissue.

EXPERIMENTAL DATA

The general plan of work entailed in this study has been to feed to very young animals minute quantities of pineal tissue and to record the weight changes, sexual differences, and in the case of dogs increased mentality, over control animals maintained under otherwise identical conditions. One hundred and ten guinea-pigs, eighteen puppies, fourteen adult dogs and sixteen chicks have been under observation.

Fresh pineal glands from cattle have been employed. These were in part from veal, in part from young adults approximating 3 years, and in part from the general run of cattle from the abattoirs. The glands averaged in weight (on weighing sixty glands) 2.14 grains. There were in the many thousand glands making up the several pounds that have been used, marked variations in size, shape and melanopigment. This pigment, which was present in a high percentage of glands, involves chiefly the encapsulating tissue.

For feeding experiments the glands were prepared for permanent use in the following manner: The fresh glands were rinsed free of blood and stripped of adherent tissue. They were ground to a fine paste in the Latapie grinder, and without drying, the paste was admixed with milk-sugar in such quantity that ½ grain milk-sugar represented 10 mg. pineal tissue. The mass was made into ½-grain tablets and quickly dried at room temperature.

Early in the work it was apparent that the more striking results were being obtained from the animals fed with pineal substance from cattle not having reached adult life. Efforts were then made to establish quantitatively the activity and the identity of the various experimental lots of pineal preparations by employing the methods commonly used in testing the activity of endocrinous derivatives. Although certain cardiovascular changes regularly follow the intravenous administration of pineal extracts to dogs, the extent of these changes is not a measure of the activity of the gland as a stimulator of growth.

On the hypothesis that precocious development is due to hypopinealism, the first work was done in anticipation that feeding would retard development and prolong the presexual life. This was begun on two chicks incubated in the laboratory. Beginning at the age of two days one was fed 10 mg. veal pineal tissue, three times weekly, the other (and in all cases of controls) was fed a blank tablet of milk-sugar. The difference in growth should be noted (Table 1).

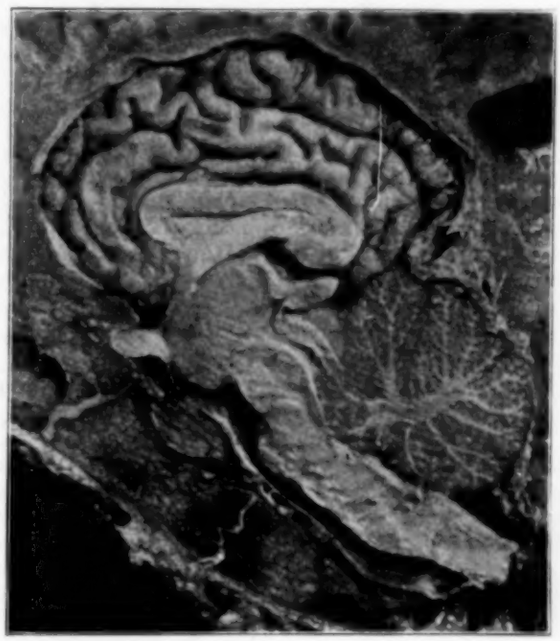

Fig. 1.—Position, relations and relative size of the pineal gland. Taken from beef 3 years of age.

TABLE 1.—RESULTS OF FEEDING PINEAL GLAND TO CHICKS

	Third Week, gm.	Sixth Week, gm.	Ninth Week, gm.	Twelfth Week, gm.
Pineal	219.5	557.7	895	925
Control	92.5	286.5	550	700
Difference	127.0	271.2	345	225

The striking disproportion in size and the marked skeletal overgrowth making the large chick very awkward in his movements, soon made these chicks a laboratory curiosity, but the small number and the different sex did not justify any inference as to the influence of the pineal feeding. The results, however, were so striking that at once work was instituted in a more extensive way.

A lot of fifty guinea-pigs in the second week of life was selected and divided into test and control groups. The test pigs were fed daily 10 mg. veal pineal tissue. The controls were fed a ½-grain milk-sugar tablet.

3. Biedl: Innere Sekretion, 1910.
4. Dandy, cited by Cushing: Pituitary Gland and Its Disorders, p. 283.
5. Exner and Boese: Deutsch. Ztschr. f. Chir., 1910, cvii, 182.
6. Foa: Arch. Ital. de Biol., 1912, lvii, 233.
7. Sarteschi: Pathologia, 1913, p. 707.
8. Dana and Berkeley: Med. Rec., N. Y., 1913, lxxxiii, 835.

Other conditions for the two lots were identical. The results obtained are given in Table 2.

TABLE 2.—RESULTS OF FEEDING PINEAL GLAND TO YOUNG GUINEA-PIGS

Control, 25 Pigs Average Initial Weight, 201.2 gm. Age, 2 Weeks			Pineal, 25 Pigs Average Initial Weight, 204.3 gm. Age, 2 Weeks		
Weeks	Aver. Wt. gm.	Gain gm.	Weeks	Aver. Wt. gm.	Gain gm.
1	198.7	—2.5	1	213.2	8.9
2	220	21.3	2	236.8	23.6
3	226.8	6.8	3	247.6	10.8
4	251	24.2	4	273.2	25.6
5	265.3	14.3	5	299.9	26.7
6	265.7	0.4	6	311.1	11.2
7	292.2	26.5	7	338	26.9
8	306	13.8	8	361.4	23.4
9	316.3	10.8	9	365.5	4.1
10	356.5	40.3	10	410.8	45.3
Average weight at end of tenth week.....356.6 gm. Average initial weight...201.2 gm.			Average weight at end of tenth week.....410.8 gm. Average initial weight...204.3 gm.		
Average gain.....155.4 gm. Gain, per cent..... 77.0			Average gain.....206.5 gm. Gain, per cent.....100.0		

Excess gain of pineals over controls, 23 per cent.

This excess in weight of pineal-fed guinea-pigs over their controls is a symmetrical overgrowth. There is some increased adipose tissue, but this is generally distributed and not localized in any one region of the body. At no time has it been possible to continue this excessive growth above normal adult size. As the animals approach adult size the pineal feeding is less effective and after full maturity is attained is without effect. There has been no tendency to gigantism.

As a step toward determining the metabolic differences, quantitative urinalyses were made on twenty-four-hour composite samples of urine from the two groups.[9] With proper regard for the numerous other factors that might vitiate the results obtained from urinalyses, there is a suggestive difference in the two urines as may be seen in the summary given in Table 3.

TABLE 3.—SUMMARY OF ANALYSIS OF URINES

	Pineal	Control
Total volume collected (24 hours)	187 c.c.	160 c.c.
Specific gravity (15.5 C.)	1.016	1.019
	Per Cent.	Per Cent.
Total solids	2.51	3.02
Water	97.49	96.98
Total mineral matter	1.21	1.37
Total nitrogen	0.628	0.872
Total creatinin	0.018	0.025
Phosphoric acid (as P_2O_5)	0.065	0.043
Calcium	0.016	0.018
Magnesium	0.029	0.018
Alkalinity (as Na_2CO_3)	0.053	0.037

Chicks.—A lot of fourteen chicks was secured at the age of one week. At so early an age sex could not be determined and the lot was divided into test and control groups without knowledge as to grouping by sex. The test chicks were placed on veal pineal tissue for one week with a resultant greater growth than controls. For the next four weeks they were fed pineal tissue from old cattle, without gaining. On being placed on the original veal preparation the test chicks again grew in excess over controls.

Dogs.—The eighteen dogs employed represent four litters. Infection of these puppies with distemper interfered seriously with the weight charts of these animals. So long as infections could be kept out of the animal quarters, the test animals outgrew the controls, but the wasting from infections interfered seriously with average results over prolonged periods. It was in connection with puppies that some differences in intelligence were observed. No great import is attached to these observations, but it was noted that the pineal-fed dogs were about one month ahead of the others in their habits. They were the first to learn to lap milk, the first to respond to a call, the first to be able to find their way back to the kennel. When work on these animals was discontinued, only the pineal-fed animals were in demand as pets, and those choosing them did so without any knowledge as to differences in feeding. Of much more importance as regards increased intelligence are the favorable results reported by Berkeley,[10] who administered pineal tissue to mentally defective children and performed Binet tests as a criterion of mental advancement.

Precocious Sexual Development.—A group of forty-eight guinea-pigs was divided into test and control lots. There was an equal number of males and females in each lot, but the males and females were separated. The test pigs were fed veal pineal tissue in 10 mg.

Fig. 2.—Effect on growth of feeding pineal-gland tissue to chicks. The larger chick was fed 10 mg. pineal tissue three times weekly.

amounts daily. Feeding was begun when the animals were 2 weeks old and continued for nine weeks. The males and females of each group were then placed together in breeding-pens. As a measure of any difference in sexual development it was thought desirable to note the date of birth of young in the two lots. As the end of the approximate gestation period approached, these animals were observed as to the date of giving birth to young. All except two of the pineal-fed pigs gave birth to young before the first of the controls.† Fourteen days elapsed between the birth of young of the first pineal-fed pig and the first control pig. In all cases the young were normal and in no wise different from any other young pigs.

COMMENT AND SUMMARY

In the foregoing records of experiments, it may be observed that some of the changes generally attributed to deficiency of pineal secretion may be produced by

9. I am under obligations to Mr. Lewis Davis for these analyses.

10. Berkeley: Med. Rec., New York, 1914, lxxxv, 85, 513.

† In a second series of fifty guinea-pigs observed as to sexual differences, the males and females have been kept together from birth. Some of the females to whom pineal gland tissue has been fed have already given birth to young and many others are within the last ten days of gestation. With the exception of one pig, the control animals evince no signs of pregnancy.

supplying an added amount of pineal substance. In an effort to reduce to rationality these identical findings derived from two opposing sources, the so-called destructive neoplasms of the pineal gland on the one hand, and the feeding of the gland on the other, there arise two possibilities: First, this syndrome may appear from disrupting the general endocrinous balance from either increasing or decreasing the amount of pineal secretion available for the body's use. These secondary changes in the other endocrinous glands are now in the course of investigation. Second, the cells of the neoplasms involving the pineal gland may retain some of the metabolic and other functional characteristics of the normal pineal cell from which they were derived, and the peculiar body, sexual and mental changes in patients with such tumors are all manifestations of increased rather than decreased pineal activity. One of the most frequently occurring lesions of the pineal is the adenoma, and there is abundant evidence that at times cells of adenoma functionate after the manner of the cells from which they arise. In adenoma of the liver in cases reported by Weber,[11] Rolleston,[12] Wheeler[13] and Ribbert,[14] distinct bile secretion by tumor-cells has been pointed out. Ribbert established that the bile present in such tumors was not the bile of icterus from necrotic liver-tissue by demonstrating that the scirrhous encapsulating tissue was free from bile-stain and that the bile was confined to the liver-like cells of the active tumor. In at least

Fig. 3.—Effect on growth of guinea-pigs produced by feeding pineal-gland tissue. Control pigs to left, test pigs to right.

one case, a metastasis in the lung from the liver secreted bile. In this connection it is significant that the functionating glandular cells of typical thyroid structure have been found in thyroid metastases in bone-tissue. Furthermore, in myeloma of the bone-marrow the cytoplasm[15] of the tumor-cells contain the granules that characterize normal myelocytes, that is, the tumor to a certain extent assumes the function of the bone-marrow. All considered, it is perceived that functional activity of tumor-cells is *not* infrequent. Germane to the present contention is the statement by Hinds Howell[16] in describing the characteristics of the cells of the pineal tumors of his three cases. He says:

> A noteworthy feature is the similarity of these tumor-cells in many instances to those of the normal pineal gland.

The results of this work lead me to the conclusion that the administration of minute quantities of pineal tissue from young animals to young animals stimulates rapid growth of the body, but not beyond normal size. Also there are less well-established indications of precocity of mental and sexual development.

11. Weber: Proc. Roy. Soc. Med. (Path. Sec.), 1910, iii, 147.
12. Rolleston: Diseases of the Liver, 1905.
13. Wheeler: Guy's Hosp. Rep., 1909, lxiii, 225.
14. Ribbert: Deutsch med. Wchnschr., 1909, xxxv, 1507.
15. Weber and Ledingham: Proc. Roy. Soc. Med. (Path. Sec.), 1509, ii, 206.
16. Howell, Hinds: Proc. Roy. Soc. Med. (Neurolog. Sec.), 1910, iii, 65.

EXPERIMENTS ON THE CURATIVE VALUE OF THE INTRASPINAL ADMINISTRATION OF TETANUS ANTITOXIN *

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While tetanus antitoxin has proved most efficacious in the prevention of tetanus, its employment as a curative agent has been much less successful. This failure to produce more uniformly good results is chiefly due to its too late administration. Insufficient dosage and the use of the subcutaneous method have also been important factors. While the subcutaneous use of antitoxin, which at first was the usual method employed, may prove of value in large doses given within the first few hours after the onset of symptoms, nevertheless it frequently fails because of slow absorption and the time required to reach the tissues of the central nervous system. In the light of our present knowledge, this method can be justified only by an inability of the physician, for one reason or another, to give an intraspinal or an intravenous injection. The latter method is being more and more recommended, and when employed before the disease has made too much headway has given much better results than the subcutaneous.

From time to time since 1903, single cases or small series of cases have been reported in which the antitoxin has been given intraspinally. Thus Neugebauer[1] in 1905 reported forty-three cases from Continental and American sources with a mortality of twenty-two, or 51 per cent., and also three patients treated by him of whom two recovered. Many of these patients received also intravenous or subcutaneous injections or both. The results seemed to some observers to be better than when other methods were used without intraspinal dosage, but on the whole, this method of treatment has not made much headway. Experimental proof of the greater value of the intraspinal method has not until very recently been at all convincing. Permin of Copenhagen, working on rabbits and dogs, showed that local tetanus could be prevented by the simultaneous injection of tetanus toxin intramuscularly and a dose of antitoxin given in the spine, whereas with the same dose of antitoxin given intravenously, local tetanus occurred. Four hours after the giving of the toxin neither method of preventing the occurrence of local tetanus was efficacious, and when nine hours were allowed to elapse between the giving of toxin and antitoxin, the animals could not be saved.

The following series of experiments was undertaken with the object of determining to what extent tetanus antitoxin given in the spine has greater curative power, when the disease is actually established, than when given in the circulation. The comparative ineffectiveness of subcutaneous injections of tetanus antitoxin in developed cases is incidentally brought out. The use of guinea-pigs for this purpose has not been recorded so far as we know. They possess, however, a marked susceptibility to tetanus together with comparative freedom from intercurrent diseases and a certain

* From the Research Laboratory, Department of Health, New York City.

1. Neugebauer: Wiener klin Wchnschr., 1905, xviii, 450.

hardihood in caring for themselves, feeding, etc., even when disabled, not shown by rabbits and other laboratory animals. The one great disadvantage to their use is the extremely small caliber of the spinal canal, for which reason a good deal of experimentation was necessary in order to perfect a technic of intraspinal dosage. Before undertaking the use of antitoxin by this method it was demonstrated by one of us (Nicoll) on dead and living guinea-pigs, that from 0.25 to 0.5 c.c. of a solution of anilin dye introduced into the spinal canal in the lumbar region rapidly finds its way up along the cord and even into the ventricles of the brain. It was then necessary to fix the effective limits of antitoxin given in the circulation as regards both the time elapsed after the giving of toxin and the dosage of the latter, and then to determine whether these limits were equaled or exceeded by intraspinal injection. It is well to emphasize at this time the fact, both as regards experimentally produced tetanus and the human form of the disease, that a very short delay in an overwhelming infection or too long a delay in any case before beginning treatment renders the action of antitoxin, by whatever method given, valueless as a curative agent.

It was found that two minimal fatal doses for a 350-gm. guinea-pig of a solution of dried standard toxin and the institution of treatment after the lapse of from seventeen to twenty-four hours afforded a good opportunity to contrast the value of different methods of giving antitoxin in animals showing the symptoms of tetanus.

DETAILS OF EXPERIMENTS

Technic of Spinal Injection.—After the hair was clipped, a small transverse incision was made down to the spine at the level of the crest of the ilium. The spine was then sharply flexed by an assistant while the operator introduced a small hypodermic needle between two spinous processes in the middle line, the needle being directed from above downward and almost parallel with the spinal column. Injections were made slowly and the fluid warmed. It is not advisable to give a greater volume than 0.5 c.c. at one time. Paralysis occasionally follows the operation, but usually of a temporary character. Injections into the circulation were made into the heart. The latter operation after a little experience is easily performed and produces no ill effect on the animal.

EXPERIMENT 1.—December 1, two fatal doses of toxin for a 350-gm. pig were injected deeply into one hind leg, no allowance being made for body-weight. Twenty hours later all pigs showed more or less stiffness in the inoculated leg. Each was given 250 units of antitoxin by the methods designated in Table 1.

TABLE 1.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 1 *

Number	Weight gm.	Method	Result
223	320	Control	D 4 days
936	290	Control	D 4 days
283	330	Subq.	D 4 days
263	330	Subq.	D 17 days
227	290	H.	Discharged
209	300	H.	D 7 days
251	305	H.	D 10 days
280	315	Sp.	Discharged
33	330	Sp.	Discharged
52	370	Sp.	Discharged
208	335	Sp.	D 4 days

* In this and the following tables, D = Dead number of days after receiving toxin; Subq. = Subcutaneously; H. = Intracardially; Sp. = Intraspinally; N = Intraneurally.

The death of Guinea-Pig 208 on the same day as the controls is in all probability to be accounted for by the faultiness of our early technic, the antitoxin probably not actually entering the spinal canal. The irregularity of the effect of the same dose of toxin on two pigs of the same weight is well shown in Guinea-Pigs 283 and 263. In the later experiments the degree of involvement of the inoculated leg at the time of giving antitoxin was carefully noted, as this factor was found to be of more importance in arriving at a prognosis than that of elapsed time alone.

EXPERIMENT 2.—January 26, two fatal doses of toxin for a 350-gm. pig were injected deeply into one hind leg, no allowance being made for body-weight. Nineteen hours later all pigs showed more or less stiffness in the inoculated leg, and were given antitoxin in the amounts and by the methods designated in Table 2.

TABLE 2.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 2

Number	Weight gm.	Amount units	Method	Result
879	265	500	Subq.	D 3 days
198	305	500	Subq.	D 5 days
48	320	500	Subq.	D 3 days
664	405	500	Subq.	D 4 days
878	290	500	H.	D 8 days
211	315	500	H.	D 3 days
491	355	250	H.	D 7 days
876	410	250	H.	Discharged Feb. 20
616	310	250	Sp.	D 7 days
580	350	250	Sp.	Discharged Feb. 20
875	360	250	Sp.	Discharged Feb. 20
874	375	250	Sp.	Discharged Feb. 20

This brings out well not only the superiority of the intraspinal method, but also the great inferiority of the subcutaneous way. The one surviving intracardial case, Guinea-Pig 876, being over the standard weight, received rather less than two fatal doses of toxin.

EXPERIMENT 3.—March 12, seven pigs were injected deeply into one hind leg with two fatal doses of toxin. The amount was proportioned to body-weight of each. Nineteen hours later they were given antitoxin in the amounts and by the methods designated in Table 3, the inoculated leg being stiff in the degree noted at the time.

TABLE 3.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 3

No.	Weight gm.	Cond. of Leg	Method	Amount units	Result
488	250	Stiff	Control	...	D 2 days
442	295	Slightly stiff	Control	...	D 3 days
499	350	Slightly stiff	Control	...	D 3 days
480	275	Slightly stiff	H.	100	D 13 days
498	275	Stiff	H.	200	Discharged April 10; drags leg
451	265	Fairly stiff	Sp.	10	Discharged well April 23; drags leg
479	270	Stiff	Sp.	50	Discharged well April 10; drags leg

It is to be noted that each pig received exactly two fatal doses of toxin and that the degree of tetanic spasm in the inoculated leg was carefully observed at the time of giving antitoxin. The one surviving intracardial case received twenty times the amount of antitoxin of one intraspinal case and four times the amount of the other.

EXPERIMENT 4.—March 24, eighteen pigs were injected into the hind leg with two minimal fatal doses of toxin proportioned to the body-weight of each. Twelve of these were given antitoxin in the amount and by the methods indicated, seventeen and one-half to eighteen hours later, the inoculated leg being stiff in the degree noted at the time. The remaining six were held for twenty-two and one-half to twenty-three hours after inoculation, as the stiffness was not marked until that time.

TABLE 4.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 4

No.	Weight gm.	Cond. of Leg	Method	Amount units	Result
116	290	Fairly stiff	Control	...	D 3 days
42	310	Fairly stiff	Control	...	D 3 days
296	250	Slightly stiff	H.	100	D 8 days
227	275	Fairly stiff	H.	100	D 4 days
399	300	Fairly stiff	H.	100	D 5 days
316	255	Slightly stiff	N.	200	D 4 days
287	255	Fairly stiff	N.	200	D 3 days
289	280	Fairly stiff	N.	200	D 3 days
306	285	Slightly stiff	N.	200	D 3 days
59	255	Stiff	Sp.	10	Discharged April 23; normal
304	275	Fairly stiff	Sp.	10	Discharged April 23; drags leg
221	320	Fairly stiff	Sp.	10	Discharged April 23; drags leg
SIX GIVEN ANTITOXIN 22½ TO 23 HOURS AFTER INOCULATION					
102	300	Stiff	H.	100	D 5 days
10	325	Stiff	H.	200	D 4 days
272	350	Stiff	H.	200	D 4 days
263	285	Stiff	Sp.	50	Discharged April 23; drags leg
123	325	Stiff	Sp.	50	D 5 days
294	350	Stiff	Sp.	50	Discharged April 23; drags leg

This would seem absolutely conclusive of the superiority of the intraspinal method of giving antitoxin over the intravenous method. It will be noted that only those animals receiving the antitoxin in the spine were able to survive. This result is the more striking since the amount of antitoxin given them was only a fractional part of that given in the circulation. An attempt was made to give the antitoxin to four guinea-pigs intraneurally. Under an anesthetic the sciatic nerve of the affected limb was cut down on and freed from the surrounding tissues, as much antitoxin as could be introduced into the nerve sheath injected, and the remainder intramuscularly directly along the course of the nerve. Owing to the small caliber of the nerve, most of the antitoxin passed to the deep intramuscular tissues. The animals lived no longer than those receiving subcutaneous injections.

In all of these experiments no guinea-pigs were discharged from observation until there was absolutely satisfactory evidence that the disease had long ceased to make any progress. While a number of the animals, perhaps most, on being discharged exhibited more or less stiffness in the inoculated leg lasting for weeks or even months, they were nevertheless in the best of health in other respects. This condition appears to be identical with that seen in human tetanus, in which the stiffness in different groups of muscles is often very prolonged even when the patients are perfectly convalescent.

Since beginning this work, we have obtained records of four consecutive clinical cases of tetanus in which an intraspinal injection of antitoxin was given and all the patients recovered. Two of these occurred in private practice and two in hospitals. In all of them, in addition to the antitoxin used intraspinally, very much larger amounts were also given by other methods.

CASE 1.—Girl, aged 10 years. Incubation of the disease, nine days or less. Cephalic type, of great severity, with many convulsions. Six hours after the locking of the jaws, 3,000 units of antitoxin were given in the spine and 10,000 in the vein. A facial paralysis had been present, however, on the side of the head on which the wound had been received for thirty-six hours previously. In all, 52,000 units were given, with the exception of the first dose, intravenously or subcutaneously. The blood showed four units of antitoxin to the cubic centimeter at the time of the last injection, about one week from the onset of the disease.

CASE 2.—Adult, male. Incubation nine days. Not given treatment for twelve hours or more after stiffness of jaws was noted, and then 1,500 units of antitoxin were given in the tissues about the wound and intraneurally, 3,500 intravenously and 300 subcutaneously; the next day 13,000 intravenously, 8,000 intraneurally and 7,000 subcutaneously. On the third day, the patient continued to grow worse with increasing rigidity, and was given 9,000 units intravenously, 8,000 intraspinally and 7,000 units into the tissues of the wounded foot. Two days later, there was noted less rigidity and the patient was able to swallow and separate the jaws to a greater degree. On this day 7,500 units of antitoxin were given in the vein, and on the following day 5,000. The blood showed 6 units of antitoxin to the cubic centimeter at a time just previous to the final injection. The patient was discharged cured after an illness of extreme severity, twenty days after the onset of symptoms. The intraspinal injection having been given so late in the disease cannot logically receive the credit for the patient's recovery, and yet the first improvement in symptoms was noted the day following the dosage given in this way.

CASE 3.—Boy, aged 9 years. Incubation not obtainable, but not over two weeks. Symptoms present for fully two days before treatment, when he received 5,000 units of antitoxin intraspinally, 3,000 subcutaneously and 10,000 intravenously, and on the next day 5,000 units in the spine. This case, while not so severe as the others, was well marked and typical of the disease.

CASE 4.—Child, aged 6 years. Incubation ten days, 3,000 units of antitoxin in the spine in the afternoon of the day on which symptoms were noted. At the same time 1,300 units were given in the veins. All subsequent dosage was intramuscular. The case was of a severe type with many convulsions.

It may be added that during this time we have had a record of another case of great severity, incubation twelve days, in which recovery followed large doses of antitoxin given principally in the vein but also in the tissues. No intraspinal dosage was given.

While this series of four cases is entirely too small to justify the conclusions that the giving of antitoxin intraspinally was the factor which determined the favorable outcome of the disease, especially as a much greater amount of antitoxin was also administered by other methods, the results are, nevertheless, in marked contrast to the average of those obtained in a much greater number of cases after the use of antitoxin in large doses given other than intraspinally.

Permin,[2] after rendering the blood of rabbits and other animals strongly antitoxic by the intravenous injection of antitoxin, was able, nevertheless, by introducing tetanus toxin by way of the nerves, to produce a local form of the disease, from which he reasons conversely that tetanus toxin, having once reached the spinal centers, cannot be dislodged by antitoxin given by the route of the blood, and therefore, all methods of giving it for curative purposes except that of direct application to the spinal cord can have little or no effect. Now it may be conceded that when the toxin has become firmly bound to the central nervous system, dissociation by the use of antitoxin is not possible. Nevertheless, one can never know in a given case how firm this union has become, and the statement that intravenous or subcutaneous injection is useless seems to us of too sweeping a character, especially since it will be noted that in the foregoing experiments a number of guinea-pigs in which the symptoms, when treatment was given, showed every evidence of the toxin having reached the spinal nerve centers, nevertheless recovered after a large dose of antitoxin given in the blood. Furthermore, we have one case of recovery in a guinea-pig with marked symptoms of tetanus following a very large subcutaneous dose of antitoxin.

2. Permin, Carl: Mitt. a. d. Grenzgebiet. d. Med. und Chir., 1913, xxvii, 1.

On experimental and clinical grounds the following recommendation for the treatment of tetanus with antitoxin would seem to be amply justified: In every case strongly suspected of being tetanus, from three to five thousand units of tetanus antitoxin should be given at the first possible moment intraspinally, slowly by gravity, and always, if possible, under an anesthetic. In order to insure its thorough dissemination throughout the spinal meninges the antitoxin should be diluted if necessary, to a volume of from 3 to 10 c.c. or more, according to the patient's age. When fluid is drawn off previously to the giving of the antitoxin, an amount of the latter somewhat less than that of the fluid withdrawn should be given. A number of cases of "dry tap" have been observed in the disease by those so expert in spinal puncture as to leave no room for doubt that the canal was properly entered. In such cases only a small amount of tetanus antitoxin should be injected (from 3 to 5 c.c.). In brief, tetanus antitoxin should be used in precisely the same way as antimeningitis serum.

Unlike experimental tetanus it must be remembered that in the human type of the disease there is frequently a focus constantly pouring out more and more toxin, for which reason it is probably advisable to repeat the intraspinal injection in twenty-four hours. While unquestionably the blood will soon become antitoxic through this intraspinal use of antitoxin alone, yet in order to insure the quickest possible neutralization of all toxins in the tissue-fluids, it would seem advisable to give at the same time, a dose of 10,000 or 15,000 units of antitoxin in the vein. A similar dose given subcutaneously three or four days later will insure a continuance of the highly antitoxic condition during the next five days. We do not believe there is any advantage in giving larger amounts of antitoxin than those indicated.

The proper and thorough surgical treatment of the wound and the use of sedatives, stimulants, etc., are very essential factors in the treatment of the disease. Finally, intraneural injections of antitoxin seem to us to be an uncertain and roundabout way of reaching the diseased nerve-centers, which may be much more simply and thoroughly accomplished by the simpler procedure of intraspinal injections.

When for various reasons tetanus antitoxin cannot be given in the spinal canal, it is far better to inject it at the earliest possible moment intravenously than to lose time in seeking skilled advice in order to give it intraspinally, which, however, should be done later. If, which is hardly conceivable, a physician is unable to give it intravenously, he should give it subcutaneously. This, though far inferior than even the intravenous way, is still of some value in early and slowly developing cases.

Note.—We have at present (July 8) two additional patients under observation each of whom is convalescent from a severe attack of tetanus. The incubation of the disease could not be obtained in either case. The antitoxin was given by the exact method and in the amounts recommended above.

315 West Seventy-Sixth Street—124 East Sixtieth Street.

Publicity.—Publicity is educational; it is a safe policy; it inspires confidence; it is a public health right. If the town is a breeding place for malaria, let it be known. If the water supply is bad, publish it. The city authorities will get to work and the taxpayer will feel an immunity from disease.—**O. Dowling** in *Ohio State Med. Jour.*

VESICOVAGINAL FISTULA AND RECTO-VAGINAL FISTULA *

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This article is necessarily in large degree a recapitulation of my surgical studies carried on during a series of years, reports of which have been published from time to time.

Soon after returning from my medical studies during 1869 and 1870 in the University of Berlin, it was my exceptional good fortune to become the student of J. Marion Sims of New York. Much of his operative success was dependent on his rare skill in the use of silver wire as a suture. Even to this day I suppose he is best known by its successful application as a suture in the cure of vesicovaginal fistula — a success attributed by himself to the great value of silver-wire sutures. Mere reference to the monumental labor of Dr. Sims for the cure of this distressing condition is sufficient here, since every surgeon is familiar with it.

The first cure effected by him was only after thirteen previous operations. These repeated experiments were made possible, first by his indefatigable persistence, and second, by the fact that a slave woman, who was rendered practically valueless by her affliction, and who had little to say as to the desirability of the operation, was his subject. The cure was effected only after four years of repeated failures.

Dr. Sims[1] reported this case in 1852. It was the beginning of a long series of most remarkable contributions to gynecic surgery. The study of this case led him to devise the Sims speculum, first improvised on occasion by using a large iron spoon, the handle of which was bent to a right angle with the bowl. I have always been at a loss which to admire most — the wonderful inventive genius, or the very uncommon surgical technic displayed by this most original surgeon. For a long period I endeavored only to imitate, never venturing to modify, or hoping to improve on any of his operative procedures. This contribution of Dr. Sims furnishes in itself little that is especially new or important.

Dr. Hayward[2] of Boston published an elaborate article in 1839, and so far as I have been able to learn, he was the first operator, at least in America, to report a cure. He said:

> I introduced a bougie from the urethra through the fistulous opening with the patient in a lithotomy position. I incised the whole of the cicatricial tissue about the orifice and dissected the membrane of the vagina about half an inch away from the wound. This was done, partly to present a large surface and partly to prevent carrying the needle through the bladder. Three interrupted sutures were tied tightly and each thread was left about 3 inches long.

In 1851 Dr. Hayward[3] reported that he had performed the operation twenty times, but it was done on nine patients only, one being operated on six times, another five, two twice and five once.

In 1847 Dr. Pancoast[4] of Philadelphia reported two successful cases. He attributed the cure largely to

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Sims, J. Marion: Am. Jour. Med. Sc., January, 1852.
2. Hayward: Am. Jour. Med. Sc., August, 1839.
3. Hayward: Boston Med. and Surg. Jour., April 16, 1851.
4. Pancoast: Med. Examiner, May, 1847.

what he called a "tongue-and-groove" method of coaptation of the freshened surfaces. One side of the wound was split, separating its surfaces for about ¾ inch. The opposite side was pared to fit and the four raw surfaces were firmly held in apposition by sutures which were allowed to remain for two weeks. A catheter was retained in the bladder with frequent irrigation.

In 1847 Dr. John Peter Mattauer of Virginia published his method for the cure of vesicovaginal fistula, using lead for suture material. He advocated its advantages in three ways:

> First, the means which I use in exposing the vagina. Second, the introduction of a new suture which lies embedded in the tissue for an indefinite period without cutting its way out as do silk ligatures. Third, a self-retaining catheter. He reported six successful operations.

For an indefinite period of the past, metallic sutures have been used for a great variety of purposes. In my edition of Percival Pott — London, 1763 — the use of gold and lead wire is described in operations for the cure of hernia. Dr. Pott states that metallic sutures, both gold and lead, were used by Albucasis and others as early as the eleventh century.

It is hardly just to speak of Dr. Sims without simultaneous recognition of the admirable ability of his colaborer, Dr. Thomas E. Emmet. The specially curved scissors bearing the name of the latter were devised for the purpose of dissecting away the posterior protective layer of the vagina for the cure of rectocele and for the reconstruction of the perineal structures. The extraordinary skill of Dr. Emmet in the use of these scissors was noteworthy. He would dissect back and forth, denuding the whole posterior vaginal wall by the removal of a single unbroken strip, as the practiced housewife pares an apple.

Probably no subject pertaining to gynecic surgery has been written on by a larger number of contributors, expressing a greater variance of opinion, than the treatment of vesicovaginal fistula. The difference of judgment has been in large measure due to ignorance of the anatomy and physiology of the pelvic floor in woman.

Both Sims and Emmet considered the silver-wire suture the important factor contributing to cure in diseases of this region. This was doubtless owing to the fact that nearly all such wounds were in greater or less degree subject to septic infection.

My old friend, Dr. E. W. Jenks of Detroit, called my attention in 1880 to his modification of the Sims-Emmet denudation. As he then explained his method, it consisted of a preservation of the posterior mucous membrane of the vagina, holding it as a flap for the protection of the wound from uterine and vaginal secretions. In his article,[5] Dr. Jenks describes his operation as follows:

> I use neither tenaculum nor tissue-forceps, but with the part tense, snip a hole in the mucous membrane in the median line, close to the integument, and then inserting the scissors with a cutting motion into the hole made, I continue to dissect the mucous membrane away from adjacent tissues without removing the scissors, first going up the septum as far as desired and then laterally, first on one side and then on the other, without removing the scissors, or once bringing their points from beneath the mucous membrane. Then, with blunt scissors, I cut away the dissected flap.

5. Jenks, E. W.: Am. Jour. Obst., 1879.

In putting his technic into effect, I soon learned that he was doing better than he knew, in that he separated the thinned-out posterior vaginal muscle from its adjacent structures. Not only was this easy of accomplishment, but also ready access was given thereby to the ruptured, separated, transverse muscles, and to the greatly enlarged and weakened levator ani. The retention of the separated portion of the vaginal muscle made it possible to make and maintain an aseptic wound and to restore the sundered parts by buried, continuous, absorbable sutures.

As a natural sequence, this process greatly simplified and assured safety in the cure of rectovaginal fistula, by suturing the bowel wound and the vaginal opening separately. The operation for the restoration of the perineum was thus reduced to its simpler factors. In the publication of this operation in 1907, I described it as follows:

> In rectovaginal fistula, the perineal structures have usually been so greatly injured that it is better to divide at once what may remain of the sphincter ani muscle. The separation of the vagina and the rectum must be widely made, devitalizing the structures as little as possible. The first step of the operation consists of refreshing the old cicatricial portion of the rectal wound. These edges must be coapted with especial care. I prefer the double shoemaker's stitch, with eye of the needle near the point, using a fine, carefully selected tendon. The suture is inserted a quarter of an inch above the upper angle of the wound, and the stitches are taken with extreme care to include the coats of the intestine, excepting of course the mucous membrane.
>
> This line of suture coapts and turns toward the bowel on either side a full quarter of an inch of the well-vitalized structure. The suture is continued externally to include a part of the sphincter muscle. The ends are left long temporarily, the better to secure control of the structures in the subsequent steps of the operation. The divided vaginal tissues are sutured in precisely the same manner. This having been completed, the final steps of the operation are the same as those for the restoration of the perineal tissues when uncomplicated by rectal fistula.

The admirable operations devised by Dr. Sims for cystocele left little room for improvement. I shall never forget his enthusiastic description of his procedure. He said:

> My primal purpose was to resect the lower segment of the protruding bladder [cystocele]. To my astonishment, on cutting away the greatly thickened structures, I found my wound was limited to the hypertrophied anterior vaginal wall, and that the bladder could be easily separated from it. I thought these structures of sufficient strength, by a careful coaptation, and by holding in place for a considerable time by silver-wire sutures, to effect a cure. You can judge of my delight when I found such restoration was usually permanent.

In the further study of cystocele in conjunction with my researches on the cause and cure of hernia, I found the cystocele not seldom dependent on injury to the floor of the pelvis, producing a hernia of the bladder. To effect its cure, I separated much more widely the anterior vaginal wall from the bladder, in order to gain free access for the restoration of the strong anterior pelvic fascia. The ease which the separation gave for a free manipulation of the bladder itself was a surprise.

An extended series of cases of wounds of the bladder within the pelvis, in which a careful closure with absorbable animal sutures enabled me to secure a perfect cure in every instance, led to the deduction

that wounds of the bladder in the lower pelvic strait might be subject to similar easy cure. The technic is delicate, but had been equally well devised by the great masters already quoted, emphasis being laid invariably on the importance of never permitting the suture entirely to penetrate the viscus of the organ.

Here again, the buried absorbable suture proved indispensable. I soon learned that the fine properly chromatized kangaroo tendon was a very important factor of success. Applied with a fine needle, without cutting edges, the eye near the point, set in a handle, it is not difficult to coapt the wound accurately with a continuous suture and reinforce it with a second layer, daintily adjusting the external wall of the bladder over the first line of sutures. This effected, the anterior wall of the vagina is carefully sutured and a catheter retained for a certain period. I have had the remarkably good fortune to secure primary cure of vesicovaginal fistula at the first operation in every instance. I attribute it to the fact that the wide separation of the fundus of the bladder puts the parts at complete rest, as the contraction of the vaginal muscle can have no part in producing tension on the sutures. This conclusion is worthy of special emphasis, since I consider it of basic importance as the especial factor of cure. The through-and-through suturing of both the bladder wall and the vaginal muscle includes important parts having different functions, the contraction and expansion of which are necessarily on different planes. It was a great surprise to me at first that bladder wounds on the intraperitoneal portion have from time immemorial been the *bête noire* of the profession.

If my conclusion is correct, the operation above described claims the careful consideration of the profession. In a paper[6] on this subject before this Section of the American Medical Association in June, 1907, I wrote as follows:

> In the surgery of the bladder from within the abdomen, I was at once impressed by the ease and certainty of repair, giving in every instance a rapid cure. This led me to the conclusion that the pelvic portion of the bladder wall was difficult to repair only because of its close attachment to other structures having different functions. On this account the wound cannot remain at easy replacement and rest—essential factors of cure. I obviate this complication and reduce the problem to its simple factors by separating the bladder wall broadly from its attachments from below and close the wound of the bladder with a fine, double, continuous, buried tendon-suture, inverting and supporting the structures by a second layer. The vaginal wound is then closed by a continuous buried suture. A catheter is retained for some days in order that the structures may remain at rest. Of course, there are no stitches to be removed, and when the wound has been made and retained aseptic, cure is to be expected.

The aseptic coaptation of tissues, alike in structure and function, is of primary importance and should be accepted as a surgical maxim. Sims believed that the properly applied silver suture was the basic factor in the cure of vesicovaginal fistula. We recognize its value in infected wounds which must heal by granulation.

I consider that the primal factors to be accepted as fundamental in importance are the making and maintaining of an aseptic wound held in easy retention and rest by buried absorbable sutures.

180 Commonwealth Avenue.

6. Marcy, Henry O.: Plastic Surgery of the Pelvic Structures, THE JOURNAL A. M. A., Nov. 30, 1907, p. 1831.

ABSTRACT OF DISCUSSION

DR. J. WESLEY BOVEE, Washington: I am glad to hear that Dr. Marcy advocates the separation of the vagina from its attachments for the closure of these fistulas. This subject was brought prominently before the professional world by George Gray Ward a few years since, and while he may not have been the first to do it—as I presume many of us had done it before that time—it certainly is the only efficient method for treatment of especially large fistulas. Some of these tax us, especially those in which the urethra is destroyed as well as the base of the bladder. We often see marked failures from other methods. In one case coming under my care two months ago, the patient had had during the past eight years eight operations for vesicovaginal fistula, all unsuccessful. One was a transperitoneal transvesical operation by a general surgeon. The woman had not passed her urine through the urethra in eight years. She had had a hysterectomy performed and the injury of the bladder was the direct cause of the fistula. In this case I did an operation by this method with perfect success. The suturing is done by this method plus the use of the Pesser catheter for from eight to twelve days. This insures practical success in all cases of this type.

DR. HENRY O. MARCY, Boston: This operation has been elaborated by me, I think, originally, and it involves a good many years of work. The last publication I made on this subject was before this section in 1907. It is practically that which I have given you to-day. In all my operations since 1907 I have not had a single failure.

THE HECHT-WEINBERG REACTION AS A CONTROL OVER THE WASSERMANN REACTION

A STUDY BASED ON ONE THOUSAND PARALLEL TESTS WITH BOTH METHODS *

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The massed statistics of Wassermann workers have shown clearly that this reaction, following the classic technic of Wassermann, using the most exact methods of titration of all the reagents, working with the most sensitive antigens whether cholesterinized or not, is *not* uniformly present in all cases of manifest syphilis from a clinical point of view. While we have proved its undefinable value as a diagnostic symptom in many cases of occult syphilis, still we must admit that at times it is consistently negative in many syphilitic conditions. There are times, too, when the reaction disappears entirely independent of treatment. At such times, the serologist is unable to assist the clinician in his efforts to arrive at a correct diagnosis or to check treatment. The disrepute into which the classic Wassermann has at times fallen in the estimation of some practitioners is not so much from the errors that have been so frequently made by incompetent serologists as it is from the *negativity* of the reaction in cases that display unquestionably syphilitic aspects, either cutaneous or visceral.

We have, therefore, been compelled to look to some other test to use, either as a substitute for the Wassermann, or, at least, as a sensitive control of the reaction in cases in which the Wassermann is absent. One of the main objections that has been raised against the test in some quarters is the fact that the straight Wassermann technic embodies the use of an ambo-

* Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

ceptor or hemolytic serum made by injecting sheep's blood into rabbits and using sheep's corpuscles as the basic material around which the remainder of the reaction is made to revolve. This objection has been well taken; for we know from actual investigation that nearly every individual carries in his blood-serum some quantity of antisheep amboceptor resultant from the ingestion of mutton. The number of people who have natural antisheep amboceptor is large. In this country my own figures show, from routine examinations, that 98 per cent. of the American people harbor greater or less quantities of this substance. Granting that this is true, we are forced to admit that a Wassermann reaction carried out in the case of an individual with a high amount of natural antisheep amboceptor and a low amount of syphilitic antibodies will usually result negatively even though the individual is syphilitic.

My attention was first called to this fact some months ago by the admirable work of Leredde and Rubenstein in Paris, who convinced me by a review of their data that the failure to obtain a positive Wassermann reaction in many cases was due to the presence of an undue amount of natural antisheep amboceptor in human serums. Leredde and Rubenstein, reporting a parallel series of tests, using both the straight Wassermann technic and a method which utilized the natural amboceptor in unheated human serums (namely, the Hecht-Weinberg test), showed that the latter test developed a positive reaction in 10 per cent. more cases of syphilis than did the Wassermann. Again, it has been argued that the heating of serums to 56 C. (132.8 F.), such as is practiced in the Wassermann technic for the purpose of ridding the serums of natural complement, develops *complementoid* substances which naturally give a false conclusion. Again, it has been asserted that the heating of serums destroys a part of the syphilitic antibody on which the reaction depends. It is for these three reasons that Hecht and Weinberg developed a technic that utilized the amboceptor and complement present in practically all blood-serums and refrained from heating the serums by using "active" or unheated serums. The method of Margherita Stern is designed to utilize the natural complement of blood-serums but pays no attention to the natural amboceptor—a serious drawback to the most accurate information for the clinician.

The observations of Hecht and Weinberg, Leredde and Rubenstein and Levaditi convinced me of the advisability of following out the technic of Hecht and Weinberg for purposes of control. Leredde's figures are based on a parallel series of blood-tests in 1,636 serums. My own investigations are confined to 1,000 parallel observations. The technic of Hecht-Weinberg, which I have worked out, is the following:

Place in a rack fourteen small test-tubes. The first ten of these tubes are used to determine the hemolytic index of the suspected blood. By this we mean the exact amount of hemolytic amboceptor present in the given blood-serum. The last four tubes are used in the actual test. Add 0.1 c.c. of fresh unheated patient's blood-serum to each of the first ten tubes. Then add decreasing amounts of normal salt solution to these tubes, beginning with 1 c.c., then 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1 c.c. to the succeeding nine tubes. Next, add increasing amounts of fresh 5 per cent. suspension of sheep's blood starting with 0.1 c.c. and ending with 1 c.c. Place the rack in the water-bath for one-half hour. The tube which last shows complete hemolysis constitutes our "hemolytic index;" if it is Tube 4 our index is 4, because this tube had received 0.4 c.c. of sheep's corpuscles. The index determines the amount of sheep's corpuscles to be added to the last four tubes. The first three tubes (11, 12 and 13) constitute the tubes for the actual test, while the last tube in the rack (Tube 14) serves as our serum control tube. Tubes 11, 12 and 13 receive, therefore, the patient's serum, the proper amount of sheep's corpuscles (dependent on the hemolytic index) rising strengths of antigen, but no complement and no amboceptor. Tube 14 receives only sheep's corpuscles but no antigen. In our technic we use 0.1 c.c. of a diluted antigen determined by titration in Tube 11, 0.15 c.c. antigen in Tube 12 and 0.2 c.c. in Tube 13. In order to equalize the volume of fluid in all these tubes, we add 0.2 c.c. normal saline to Tube 11, 0.15 c.c. to Tube 12 and 0.1 c.c. to Tube 13, and 0.3 c.c. to Tube 14. The tubes are then agitated and placed in the water-bath for half an hour. These last four tubes are filled at the time we make the additions to the first ten and are left with them in the water-bath for one-half hour for fixation of complement, the rack is then taken out and the hemolytic index computed. If the index is low, say from 1 to 4, we add 0.1 c.c. of sheep's blood to the last four tubes. If the index is between 5 and 7 we use 0.15 c.c. sheep's blood and if it is between 7 and 10 we use 0.2 c.c. In our experience in this country we have never found an index above 10, although in France it is not uncommon to obtain an index of 15 or 17.

If the patient's serum has an index below 3, we regard the reaction as of doubtful value. If it is above 3, we regard it as absolute. The reaction is read off exactly as is the Wassermann, that is, inhibition or non-inhibition of hemolysis.

This method utilizes the natural complement present in nearly all human blood and the natural amboceptor present in at least 98 per cent. of blood-serums. If the amount of complement or natural antisheep amboceptor is very low, we can add the proper amount of guinea-pig's serum or rabbit's immune serum, ascertained by preliminary titration. The particular advantage of this test is the fact that we are dealing with unheated serums, avoiding the chance of the development of complementoid substances. I wish to state, in passing, that the Hecht-Weinberg test has never been found negative in any blood-serum which showed a positive Wassermann, but it has frequently been found positive in blood-serums that show a negative Wassermann. Thus, its advantage can readily be seen. We do not offer these conclusions for the purpose of eliminating the Wassermann, but we do most candidly confess that provided there is sufficient natural amboceptor present, it has superior advantages to the Wassermann. Our practice is to perform both tests, one serving as a check on the other.

The group of cases in which the amount of natural amboceptor in human serums seems to play a definite rôle in making a Wassermann appear negative and a Hecht-Weinberg positive, comprise the following:

1. Cases of ocular syphilis.
2. Cases of visceral syphilis, particularly of the liver and heart.
3. Cases of syphilis that have received intensive but inadequate treatment.

4. Provocative cases in which we are seeking to revive a Wassermann in suspected cases.

5. Cases of monosymptomatic tertiaries.

In general, in cases of what might be termed "limited" syphilis, this modification will be found of great use. With Leredde and Rubenstein, Latapie, and Hecht and Weinberg, I believe that the use of the Hecht-Weinberg test as a control over the Wassermann will bring to light many cases of occult syphilis about which the clinical diagnosis is often uncertain. Our rule is to do both tests, and as a result of this practice *we can offer a series of one thousand cases in which the Hecht-Weinberg was positive 15 per cent. more often than the Wassermann.* We regard this "dissociated reaction" as diagnostic of syphilis. The series studied represents every phase of true syphilis from the primary stage through secondary, tertiary and so-called metasyphilitic conditions. We regard the Hecht-Weinberg test as the best modification that has come forward to serve as a check on the classic method of Wassermann, Neisser and Bruck.

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UNUSUAL CASE OF FATAL POISONING FROM THE ADMINISTRATION OF MALE-FERN AS A VERMIFUGE

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On May 8, 1911, while in Colorado Springs on an investigation for the United States Bureau of Animal Industry, I had an opportunity to attend a necropsy on a man who had died from the effects of an overdose of the oleoresin of male-fern. Some of the features of the case are so unusual that it deserves greater publicity than was accorded it at the time it happened.

The victim of the poisoning, E. M. C., was a young man, 23 years old, who lived on a ranch near Woodland, Colo. He was always hungry and was feverish at night. He had taken two or three 8-ounce bottles of a remedy for "worms" prescribed by a so-called "Quaker doctor" of Joplin, Mo. The remedy was to be taken after missing three meals, one dose being taken at night and double the evening dose in the morning, followed by a dose of salts. This medicine had made him sick and kept him in bed for a day; but he had found something in the feces which he thought was a piece of tapeworm. This specimen was sent to the grandmother at Joplin, who took it to an "Indian doctor," who pronounced it the largest tapeworm he had ever seen and supplied either the medicine or a prescription for it, the evidence on this point being uncertain.

The treatment was administered Sunday, May 7, 1911, the patient going without supper Saturday night. At 6 a. m. Sunday he took half the medicine sent him and at 7 he took the remainder. The first dose nauseated him and he continued nauseated after the second dose. The medicine caused a considerable diarrhea. At 9 a. m., as directed, he took 1 or 2 ounces of castor oil and 20 drops of turpentine. The patient got worse constantly, but as he and his family had been informed that the medicine would make him very sick, they were slow in taking alarm. At last when the boy's eyes took on a staring appearance and he seemed about to go into convulsions, a doctor was summoned. At this time the patient seemed to be in great agony; he had a distressed and anxious look and the face was flushed. He was very thirsty, but was allowed only sips of water. Convulsions came on about 1 p. m.

Dr. Creighton of Manitou, who was first summoned, found the boy on the bed, unconscious, the eyes glassy and insensitive to the touch and the pupils dilated. He was writhing, but the body was rigid in tonic contraction. The jaws were set and he was unable to reply to questions. This was nearly 2 p. m. On the history and symptoms, Dr. Creighton diagnosed the case as poisoning and tried to wash out the stomach with a solution of Epsom salt through a stomach-tube, but the jaws were too rigid. He then sent for Dr. Beck of Manitou, who arrived in fifteen or twenty minutes, and they administered 25 grains of chloral and 30 grains of potassium bromid. No relaxation followed these, nor did a dose of apomorphine produce vomiting. Later, when the pulse was failing, the breathing becoming more labored and the patient cyanosed, they administered digitalis, strychnin and nitroglycerin but again with no response. The rectum was washed out with water and glycerin. Ten minutes before death they sent for Dr. Hanford of Colorado Springs, but while he was on his way the patient died, death taking place about 3:30 p. m. The rigidity of the patient increased up to the time of death and rigor mortis was pronounced at once.

The necropsy was conducted by the El Paso county physician, Dr. E. L. McKinnie of Colorado Springs, the necropsy work being done by Dr. Lewis H. McKinnie of Colorado Springs. The necropsy was the day after death and at this time the rigidity and cyanosis had disappeared. Both lungs were edematous, the right one intensely congested and the left one only slightly less so. The liver was enlarged, the spleen somewhat congested but not markedly enlarged. Both kidneys were congested, the right one being very large and having two ureters. The upper portion of the intestine for about 3 feet from the pylorus was hemorrhagic and intensely inflamed. There were other inflammatory areas lower in the intestine and the stomach was congested. The heart was of normal size, somewhat flabby and presenting evidence of mitral insufficiency.

An analysis of the stomach contents by Mr. G. C. Lake, the city chemist of Colorado Springs, showed the presence of a substance identical with the dregs left in the bottle containing the medicine furnished by the "Indian doctor." This substance, judging from its color and the characteristic odor, and from the purpose for which it was administered, was undoubtedly oleoresin of male-fern. According to the testimony of the city chemist, there is no adequate chemical test for this substance, but to one familiar with it the odor is unmistakable. Santonin was found absent. The substance left in the bottle had the characteristic color and odor of male-fern. Apparently male-fern was at least the principal ingredient and there was certainly an overdose, enough to cause death.

The stepfather and the mother had watched the evacuations of the patient after the administration of the medicine and while there was a sediment in the watery stool, there was nothing resembling a tapeworm. Slitting the intestines at the necropsy disclosed nothing of the sort. The description of the fragment of supposed tapeworm sent to Joplin suggests a spurious parasite bearing a superficial resemblance to a tapeworm. The fact that the "Indian doctor" identified it as a tapeworm is no evidence at all, especially in view of the fact that no worm was passed subsequent to the passage of the fragment, and nothing of the sort was found on necropsy. The fact that this doctor called himself an "Indian doctor," advertised in the papers, and guaranteed to remove tapeworms, according to the testimony, shows distinctly what status should be assigned to him. Even reputable doctors in ordinary practice are none too sure of their ground when dealing with fragments or supposed fragments of parasites. On one occasion a physician detained a patient from taking a steamer to Europe while he rushed a fragment of supposed parasite to the Bureau of Animal Industry at Washington for

identification. The fragment indicated that the patient had been drinking lemonade, as it was the pulp vesicle of a lemon, and a telegram to this effect was sent the physician. Similar cases are by no means uncommon.

The coroner's jury found that the deceased in the present case came to his death from poisoning due to male-fern procured from a certain person known as the "Indian doctor" of Joplin, Mo. The striking features of the case are, first, that the patient probably had no tapeworm and so met his death partly as the result of stupidity of diagnosis, and second, that the "doctor" should send a poison as powerful as oleoresin of male-fern, evidently in amounts in excess of the usual dose, to be administered to a person in another state, and further to order that the male-fern be followed by castor oil, a procedure known to increase the absorption and toxicity of the drug, the patient's death in consequence being directly due to extraordinary stupidity in treatment. There is always the evident possibility that such persons as this "Indian doctor" will cause the death of the person who trusts their preparations; it is worth while to put concrete cases of the sort on record as an aid to those who would keep others out of danger.

SHOTGUN WOUND OF ABDOMEN, WITH RUPTURE OF PREGNANT UTERUS

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Patient.—F. F. (No. 193531), an Italian woman, aged 36, married, housewife, was brought to the Accident Department of the Massachusetts General Hospital, Jan. 25, 1914, at 7:45 p. m., by the police ambulance of a neighboring town. No history was obtainable from the patient on account of her unfamiliarity with the English language and her condition of shock. It was said that she had been shot with a shotgun at close range about thirty minutes before entrance.

Physical Examination.—A well-developed and well-nourished woman in considerable shock, moaning, but conscious. Skin somewhat clammy; mucous membrane pale; pupils equal, regular and reacting normally. Size and position of heart normal; sounds regular and of fair quality; no murmurs heard. Lungs clear and resonant throughout both fronts, backs not examined. Abdomen somewhat distended, with an irregular, lacerated wound in the lower half, the larger portion of which was in the right lower quadrant. The wound was very irregular in outline, with much laceration and shredding of the tissues of the abdominal wall; its longest diameter was transverse, and it was of a size to admit two fists into the abdominal cavity. Protruding from it were two or three coils of the small intestine, approximately about 3 or 4 feet in length. A portion of the bowel lay in contact with the table when the patient was first seen. Blood oozed freely from the wound. In the right groin, about 2 inches below Poupart's ligament, were two small punctured wounds about 2 mm. in diameter, with slightly irregular and infolded edges. No powder burns were seen. No wounds of exit could be recognized. Left leg and foot were moderately swollen, pitting on pressure and apparently associated with numerous varicosities of veins and venules in the lower leg and foot. A pelvic examination was not made. There was no bleeding from vulva. Knee-jerks were equal and active. Temperature 98.6. Pulse 63.

Sterile towels, wet with hot salt solution, were immediately applied to abdomen to cover intestines. Morphin sulphate, ¼ grain, and camphorated oil, 30 minims, were given intramuscularly and 1 pint of normal salt solution was injected under the right breast. Preparations were made for an immediate operation.

Operation.—Ether anesthesia. Moist sterile towels were placed over the protruding intestines, and the skin of the abdominal wall prepared with benzin, iodin and alcohol. Examination of protruding bowel revealed about forty small perforations scattered along from 2 to 3 feet of the bowel, and in some places shot could be palpated in the bowel wall. Gas and a slight amount of frothy fecal matter exuded from some of the perforations. The perforations were infolded with purse-string sutures of silk, several being included in one suture in many instances. At one point this infolding caused a marked constriction of the lumen of the intestine, but gas could be squeezed through. The intestines were carefully washed with warm salt solution and replaced. There was considerable hemorrhage in the abdominal cavity. Exploration showed an enlarged uterus with a rent in the anterior wall about 4 inches long. An umbilical cord protruding from the wound in the uterus led to a fetus, estimated at about four months, which was lying loose in the abdominal cavity. The placenta was removed from the uterus manually, and the uterine wall closed with No. 2 interrupted chromic catgut sutures. The patient was given one ampule of sterile ergot subcutaneously. No other intra-abdominal injury was found. The abdominal cavity was irrigated with warm saline solution. One cigaret-wick was placed to the right iliac fossa and one to the pelvis. The fascia, muscle and peritoneum of the abdominal wall were closed in a transverse direction in one layer with No. 2 interrupted chromic catgut, after the lacerated edges of fascia and skin had been trimmed away. The skin was loosely approximated with interrupted silkworm-gut, with two cigaret-drains to the subcutaneous tissue. Patient's pulse at the end of operation was 84. She was sent to the ward in surprisingly good condition and placed in Fowler's position, with rectal saline seepage.

Postoperative History.—The patient made a steady and uneventful convalescence. There was some sloughing of the edges of the wound with separation of the skin. This was later closed by secondary suture, with local anesthesia. A few stray shot were removed from the superficial layers of the abdominal wall and groin. These corresponded to about No. 7 bird-shot. March 10, 1914, the patient was discharged to the Convalescent Home in excellent general condition, with a very small granulating wound. Two weeks later she was discharged from the Convalescent Home, the wound being entirely healed and solid, without evidence of hernia. She was in excellent general health and was able to walk about and upstairs without difficulty. Bowels moved normally, and the uterus had undergone normal involution.

Remarks.—An interesting point in this case was that while the direction of the wound in the abdominal wall was distinctly transverse, the uterus was ruptured in a longitudinal direction and no marks or shot wounds of any kind could be found on the body of the fetus. It would seem that the rupture of the uterus was the result of a bursting strain rather than of actual perforation by the shot. The withstanding of a very considerable loss of blood without particular evidence of shock may be accounted for by the pregnant condition of the patient.

205 Beacon Street.

Salvarsanized Serotherapy.—Bériel and Durand emphasize that if the serum is drawn soon after the salvarsan has been given and is then injected into another person, this is not serotherapy but chemotherapy, as more or less of the drug is still in the serum and there has been time enough for the antibodies to be generated in response to the action of the drug. In their clinical work in this line they always allow two or three days to elapse before drawing the serum for therapeutic use on another patient. In their communication in the *Bulletins et mémoires de la Société medicale des hôpitaux de Paris,* they relate their experiences in this line with intraspinal injection of serum from persons who were just entering on the second stage of salvarsan two or three days before. They keep the serum for twenty or forty-eight hours, heat it to 56 C. (132.8 F.) and then make the intraspinal injection in cases of tabes or paresis. They report encouraging results to date.

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THE PART PLAYED BY NUTRITION IN PREGNANCY AND DEVELOPMENT

In a recent discussion[1] of the relative parts played by heredity and food, respectively, in the development of the fetus, it was pointed out that, although the nutrition of the mother has a great influence on the offspring, the size does not appear to be materially modified by the liberal supply of any one element. In the case there referred to, although a high calcium ration, containing over five times as much lime as the standard ration used for comparison, was added in the food of the mother during the entire period of gestation, no evidence was gained that the skeleton of the fetus was increased in any dimension or in calcium content thereby.

It does not follow, however, that because an overabundant supply of any essential element fails to induce undue development of any parts in which it is specially concerned, an adequate administration of suitable nutrients is without any advantage. It is true that food cannot be regarded in any sense as the supreme cause of growth. Nutrition can only give the growth impulse free play. The old idea that protein is the determining factor in growth has been abandoned in the sense that it causes development. On the other hand, we must not forget that without protein or without any other necessary tissue constituents development is possible only so far as the requisite materials are produced anew by the maternal tissues, in the case of prenatal growth, or furnished by the sacrifice of the maternal store of them. Accordingly the food factor in development may begin to manifest itself not where the supply is both suitable and abundant or even excessive, but rather where it is scanty and inappropriate.

To what extent the ration fed to the pregnant mother may affect the general development of the fetus is interestingly shown in recent experiments at the Iowa Agricultural Station in Ames.[2] Comparisons were instituted between the young of swine fed in some cases on corn grain alone, in others on the same basal ration together with such additions as were suggested by the chemical nature of the foregoing food. Corn (maize) is markedly deficient in calcium and quite low in protein. The maize protein is, furthermore, deficient to a considerable extent in some of the essential amino-acids. This is especially true of the protein zein which comprises practically 58 per cent. of the corn proteins and does not yield tryptophan, lysin or glycocoll among its amino-acid derivatives. The marked preponderance of zein in corn greatly lessens the general efficiency of the protein *in toto*. To supplement the inferior protein of the corn and make the ration more complete from the amino-acid point of view, blood-protein was employed as an adjuvant to the basal ration by the Iowa investigators, and the mineral deficiency was remedied by administration of calcium carbonate. In the normal body there is just about two-thirds as much calcium as nitrogen, that fundamental element of protein on which the maximum emphasis is usually placed by feeding experts. Therefore, the requirement of calcium deserves most careful consideration among the mineral nutrients.

The Iowa experiments have given a significant answer. The addition of calcium salts to the fixed ration of corn and common salt for pregnant young sows resulted in new-born pigs having greater size, more vigor, bigger bone, increased coat-quality, better coat-color and higher condition. The addition of the blood-protein was effective in the same directions, its influence being more marked generally than that of the calcium addition alone.

The effect of qualitative adjustments in the character of the diet on postnatal growth has lately been demonstrated by Osborne and Mendel,[3] who have shown how the dietary inefficiency of zein hinges on the peculiarities of its amino-acid make-up. When zein serves as the sole source of nitrogen in the ration, nutritive failure inevitably follows sooner or later. This is not due simply to a failure to digest the protein or to absorb its cleavage products, that is, its amino-acids. When the missing amino-acid tryptophan (or a tryptophan-yielding protein) is added to zein, it may suffice for maintenance, since this amino-acid is indispensable and its absence from the diet cannot be made good within the organism itself. The missing amino-acid lysin will not replace tryptophan in making maintenance possible. On the other hand, inasmuch as new construction of tissue can proceed only when all of the necessary amino-acids are furnished, in the case of zein the missing lysin, as well as tryptophan, must be supplied before growth takes place.

1. Heredity versus Food in Development, editorial, The Journal A. M. A., June 6, 1914, p. 1813.

2. Evvard, J. M.; Dox, A. W., and Guernsey, S. C.: The Effect of Calcium and Protein Fed Pregnant Swine upon the Size, Vigor, Bone, Coat and Condition of the Offspring, Am. Jour. Physiol., 1914, xxxiv, 312.

3. Osborne, T. B., and Mendel, L. B.: Nutritive Properties of the Proteins of the Maize Kernel, Jour. Biol. Chem., 1914, xviii, 1.

It happens fortunately in human nutrition that the diet supplied to the pregnant mother and the growing young is not restricted to a single protein of the inadequate type represented by the principal protein of maize. Variety as well as liberality in the diet as a rule makes for safety and efficacy in respect to the suitability both of the protein and of the inorganic ingredients. These facts cannot be too vigorously emphasized at a time when calories furnish the text for most discussions on nutrition.

THE NUTRITION OF THE CARDIAC MUSCLE

It has been calculated that the heart obtains at least one-third of its energy from the oxidation of carbohydrate.[1] This experimentally established conclusion may serve as the basis for the discussion of a possible dietetic treatment of "heart-weakness," so far as this involves a functional inadequacy of the myocardium. As muscles work preferably by utilizing the available carbohydrate of the organism, and vigorous muscular performance is known to reduce considerably the quantity of the stored glycogen and the circulating sugar, it is quite logical to ask if the heart-muscle cannot be fortified in its activity by ensuring for it an abundant supply of carbohydrate.

From the fact that the level of the sugar-content of the blood tends to remain constant in health and under ordinary conditions of exercise, and, furthermore, that sugar is promptly eliminated when any excess above the usual level continues to circulate, it may be teleologically assumed that a supply of carbohydrate ample to maintain its needs is usually furnished to the heart. It by no means follows, however, that the nutrition of a weakened or overworked heart-musculature is equally adequate. Indeed, it is easily conceivable that the administration of an overabundance of sugar might act as a wholesome source of recuperation to a depleted organ. That is, it may be that blood of normal or undernormal composition with respect to sugar-content is not ideally adapted to supply most advantageously the needs of a diseased myocardium constantly taxed to its utmost by the physiologic demands of the circulation and frequently by the added stimulus of administered heart-drugs.

It is impossible by means of oral administration of carbohydrate to increase the sugar-content of the blood supplied by the systemic circulation to the heart except in a minor transitory degree. The liver stands between the alimentary tract and the general blood-stream as a clearing-house through the portals of which the sugar must pass and from which its distribution is regulated by the hepatic glycogenic functions. Although, judging from several clinical reports, sugar may be used successfully by way of the mouth to strengthen the heart-muscle, it is, nevertheless, probable that introduction by other channels than the digestive tract affords the surest means of supplying carbohydrate directly to the active musculature. By means of subcutaneous injections and intravenous infusions sugar can be made to enter the circulation promptly; and these, along with the action of drugs which induce a hyperglycemia, constitute the essential ways of testing the hypothesis of the interrelationship of the impaired myocardium and its carbohydrate supply.

Considerations like the foregoing induced Büdingen[2] to study the effect of direct sugar therapy on patients with suitable cardiac conditions. The administration of the sugar was carried out with isotonic (5.4 per cent.) solutions of glucose either by rectal introduction or intravenously. The clinical records of typical cases reported show an unexpectedly favorable outcome in many instances. It would be most premature to herald them as convincing proofs of the success of the procedure referred to, and for this reason we have not commented on the indications and the findings in detail. The well-known variability in the behavior of patients with heart-troubles, the unquestionable influence of the psychologic factors, the widely prevalent combination of drug treatment with physical and dietetic therapy — in other words, the large number of variables which must be taken into account in evaluating clinical evidences of improved cardiac conditions warn against generalizations. Every newly proposed method of treatment promptly finds interested advocates in the period of early enthusiasm for a new and promising idea. Time, criticism and accumulated experience usually serve to bring to light various shortcomings and limitations, complete failures or explanations which may quite upset the fundamental hypothesis.

The infusion of sugar solutions into the blood, quite aside from its possible usefulness, is by no means a simple procedure. It must be carried out with surgical precautions, with freshly distilled solvent and sterile materials; and even then it may be dangerous. A quart of an isotonic glucose solution furnishes at best no more than two ounces of sugar, from which not much can be expected with respect to contributed energy-supply. But emergency measures may be heroic; and the fact that suggestions like those just published by Büdingen seem far-fetched need not condemn the underlying ideas to oblivion so long as they can serve to arouse an interest in the underlying defects rather than the superficial symptoms of cardiac weakness. Pulse-records, roentgenograms and electrocardiograms are, after all, only incident to the fundamental pathologic problem.

1. Sugar in Cardiac Metabolism, editorial, THE JOURNAL A. M. A., June 13, 1914, p. 1895.

2. Büdingen, T.: Ueber die Möglichkeit einer Ernährungsbehandlung des Herzmuskels durch Einbringen von Traubenzuckerlösungen in den grossen Kreislauf, Deutsch. Arch. f. klin. Med., 1914, cxiv, 534.

RABIES AND DOG-DAYS

The coming of the "dog-days," especially if the season happens to bring with it one or more prolonged heated periods, attracts the attention of the public generally much more to the danger from rabies than do definite reports of the spread of the disease at other seasons of the year, which ought to arouse solicitude. Boards of aldermen, city councils and town officials of other kinds wake up from the most absolute lethargy with regard to the disease at this time, and, especially in the smaller towns and country places, pass ordinances and revive regulations requiring dogs to be muzzled while on the streets. This is all the more amusing because the term "dog-days" has, as we have pointed out before, no reference to dogs, but is borrowed from the Romans, who called Sirius, the brightest of the fixed stars, the dog-star. At one time during the Roman epoch, the rising of this star coincided with the rising of the sun in the latter part of July. The twenty days preceding and twenty following this conjunction were for the Romans *dies canis*, the days of the dog — or the dog-star. Rome had its fiercest heats usually during this period; therefore, the time was dreaded and came to have the reputation of an unhealthy season, though not with any special reference to the dogs of Rome.

In accordance with that tendency which is often so marked to substitute some apparent etymology for the real significance of a term, in our day the popular meaning of the "dog-days" is that dogs are especially likely to go mad at this time. The consequence is that, while the animals are made uncomfortable by nose muzzling, their discomfort is greatly added to by the foolish dread which keeps people from giving them water or caring for them properly. A fact which is very well illustrated by a recent startling report from Seattle is that rabies may occur at any season of the year; the actual statistics show greater frequency of the disease during the winter than during the summer months. The affection is most common usually in the early spring, and March and April would be a much better time to select for "dog-days" in the popular sense than the weeks of July and August that have by misapprehension come to be looked on as the special period of danger.

The Seattle epidemic shows how much of real danger there is from this disease when it gains a foothold because of neglect of proper precautions. Surgeon Lloyd[1] of the Public Health Service recently reported that up to the beginning of June there had been 361 cases of canine rabies in the city of Seattle since the outbreak of the disease began in September, 1913. Up to this the disease had not been observed in Seattle. Indeed, some of the inhabitants of the Puget Sound region have been accustomed to emphasize the healthfulness of their climate and soil by calling attention to the absence of rabies. On the other hand, many who wished to minimize the value of laboratory experimentation on animals were quite ready to declare that the absence of rabies in these Puget Sound cities and towns was evidence that there was exaggeration, to say the least, in the report of the occurrence of the disease in other places, due to the overweening interest of laboratory workers. Nearly one hundred of the Seattle cases have been proved positive in the laboratory and the clinical course of the disease in a great many of the other cases has been so typical as to leave no room for doubt as to the genuineness of the affection under observation.

This is what may occur practically anywhere in this country if the infrequency of the disease begets overconfidence and neglect. Although we disapprove the infliction of unnecessary suffering on animals, the popular dread of dogs during the misunderstood dog-days affords to physicians an educational opportunity too good to be lost. This is the time when they may profitably emphasize the need for special precautions with regard to the spread of rabies. The problem of the control of rabies is mainly the care of stray animals and especially of those that have no proper owner, but live more or less on the bounty of the community. Careful registration of animals and the destruction of those for which no one would assume responsibility to the extent of paying a yearly license would greatly limit the disease. The problem is simpler in England, but the success in practically obliterating the disease for the last twenty years in that country shows what can be accomplished. We need intelligent, persistent scientific interest to prevent the spread of the disease and not the annual attack of hysteria that inflicts cruelty without accomplishing any good purpose.

1. Lloyd: Pub. Health Rep., June 19, 1914.

BUTTER-FAT IN INFANT-FEEDING

The methods of the artificial feeding of infants vary from decade to decade in accord with new findings in the physiology and pathology of nutrition and with the theories that grow out of them. It is not long since "percentage feeding" had its vogue, and the food for the infant was prepared with strict regard to the proportions of the nutrients as they are believed to exist in human milk, and quite independent of qualitative considerations. The cereal preparations, early introduced into use in infant-feeding, lost their popularity in view of the apparent success of the newer schemes for modifying cow's milk with respect to the relative quantities of its components. Gradually, however, attention became directed to occasional untoward results after feeding modified milk that was often quite rich in fat. Among others the German pediatrist Czerny and his school laid the responsibility for many cases of malnutrition in infants on such diets to the presence of the milk-fats. Many an infant fed on a

theoretically ideal modification of cow's milk showed symptoms which promptly subsided when the fat was omitted and carbohydrate-containing substitutes were offered. Buttermilk, skimmed milk, cereal preparations, malt products and the like found their way into use as the pendulum of opinion swung away from the conventional cream-containing dietaries.

Dr. Niemann of the University Children's Clinic in Berlin has raised the question as to the wisdom of this trend of practice away from the use of milk-fats in the nutrition of the infant. A one-sided dietary rich in carbohydrates appears not infrequently to induce harmful consequences quite as serious as those that have been ascribed to fats. As Niemann points out,[1] the presence of an adequate reserve of fat is a characteristic of every healthy breast-fed infant. This fat deposit is surely not without import. It may act merely as an available store of energy to be drawn on in time of need; the fatty layer beneath the skin may serve an important purpose in the conservation of body heat and the maintenance of a normal temperature; or the fat may prevent the undue enrichment of the tissues in water. Whatever its function, however, it is evident that many of the current modes of artificial feeding fail to induce the typical accumulations of fat that one expects at this early age. The formation of a large fat reserve out of carbohydrates and proteins alone does not seem to follow with readiness in the infantile organism.

Wherein are the alleged dangers attributed in the past to the fat-content of the food to be sought? The fatty acids have been held responsible for them in great measure. The milk-fats of cattle yield more of the lower, volatile fatty acids than does human milk-fat. The detriment is conceived to lie in an acidosis in which these lower fatty acids are concerned; and we are reminded that various oils, notably cod-liver oil, which belong in a different category with respect to the point emphasized, are often excellently tolerated when milk-fat promptly occasions unfavorable symptoms exhibited in the form of high ammonia output, that is, acidosis.

Acting on the theory here propounded Niemann has proposed to eliminate the supposed objectionable features of cow's milk-fat by preparing a modified product from butter. The latter is thoroughly washed with water until all acid products are removed, and is then administered as an adjuvant to skimmed milk and cereal mixtures. The results of feeding this product thus fortified with "purified" butter-fat have been encouraging. It has been successful in cases of inability to utilize any considerable amount of fat as it naturally occurs in cow's milk; in cases in which various food mixtures poor in fat and rich in carbohydrate have failed to induce proper gains of weight; and in infants that were passing through the stage of recovery from losses incidental to malnutrition.

Only long-continued and extensive observations can finally determine the real efficiency of the feeding of refined butter-fat. It is of interest to note that the results obtained by Niemann in his preliminary investigation on children are quite in harmony with the unique findings of Osborne and Mendel in this country with respect to the factors influencing the growth of experimental animals.[2] These investigators have demonstrated that butter-fat furnishes some substance that exerts a marked influence on growth. They found, for example, that young rats fed on certain artificial mixtures of foodstuffs (the details of which need not be reviewed here) sooner or later ceased to grow and finally declined in body-weight. The fat in these food mixtures consisted of lard. When this was replaced in part by butter-fat, nutritive recovery and resumption of growth promptly ensued. Of similar significance is the fact, reported by Osborne and Mendel, that although rats have grown normally for more than a year on a food mixture containing dried whole milk, a comparable diet containing centrifugated (that is, fat-free) milk in every instance proved inadequate during a similar period. Again, they have found that another type of nutritive deficiency exemplified in a form of infectious eye-disease prevalent in animals that are inappropriately fed[3] is speedily alleviated by the introduction of butter-fat into the experimental ration.

It must be borne in mind that butter-fat, like other fats and oils, is not a simple chemical compound, but a highly complex mixture including glycerids and various other substances in part as yet unknown. The chemical character of the unique growth-promoting feature of butter-fat needs to be investigated in detail. Osborne and Mendel have already found that this agent is not present uniformly in all fats. Egg-fat contains it,[4] whereas some other oils have proved no more efficient than lard. Such considerations make it evident that the comparative value of the natural fats employed in nutrition must be determined, as well as the individual rôle of the different proteins, carbohydrates and mineral nutrients. Perhaps Niemann has unknowingly put into practice in infant-feeding the lessons to be derived from the extensive researches of the American investigators who have been mentioned above.

1. Niemann, A.: Ueber die Möglichkeit einer Fettanreicherung der Säuglingsnährung, Jahrb. f. Kinderh., 1914, lxxix, 274; abstr. in THE JOURNAL A. M. A., April 18, 1914, p. 1291.

2. Osborne, T. B., and Mendel, L. B.: The Relation of Growth to the Chemical Constituents of the Diet, Jour. Biol. Chem., 1913, xv, 311; The Influence of Butter-Fat on Growth, ibid., 1913, xvi, 423.

3. Compare Knapp: Experimenteller Beitrag zur Ernährung von Raten mit künstlicher Nahrung und zum Zusammenhang von Ernährungsstörungen mit Erkrankung der Conjunctiva, Ztschr. f. exper. Path. u. Therap., 1908, v, 147.

4. This has also been pointed out by McCollum, E. V., and Davis, M.: The Necessity of Certain Lipins in the Diet during Growth, Jour. Biol. Chem., 1913, xv, 167.

THE RESISTANCE OF LIVING TISSUES TO DIGESTION

The question why the stomach does not digest itself is an ancient one. Enlarged to include the other portions of the alimentary tract this problem continues to elicit interest, to awaken discussion, and to provoke actual experimentation. A thoughtful student who has watched a shred of protein dissolve in a tube of gastric juice as demonstrated in every physiologic laboratory must have faced the same mystery. The literature of the subject is truly voluminous;[1] and every attempted explanation seems sooner or later to encounter insuperable objections. The problem, as connected with the possible etiology of ulcers of the digestive tube, has entered into the domain of pathology.

The most extreme view, which is still widely prevalent, assumes that under no circumstances can living tissues be dissolved by the natural digestive juices. In the light of recent experimental research, however, this can no longer be maintained.[2] It has now been demonstrated that the living mucosa of the urinary bladder, for example, of animals of any given species, cannot resist the proteolytic power of the natural, activated pancreatic juice of animals of the same species; and that it is even more readily attacked by the natural gastric juice. Even the living intestinal mucosa appears unable to remain intact under vigorous subjection to the gastric juice of the organism to which it belongs if food is not simultaneously administered to assist in some way in the protection of the tissue. The native protection which living tissues possess toward digestive agencies is thus limited at best. If the intestinal mucous membrane, almost continually exposed to the pancreatic juice, or the stomach mucosa, likewise bathed by an active gastric secretion, are not ordinarily disintegrated by these proteolytic agencies, we must assume that they possess the natural immunity to digestion during life in greater measure than do some of the other mucous membranes or epithelial structures of the organism.

We may as well admit that the mechanism of the undoubted specific protection of the gastric and intestinal mucosa still remains a mystery. The theory of the existence of antienzymes—antipepsin and antitrypsin—in suitable localities, has found wide acceptance, yet has not survived all the criticisms aimed at it.[2] The protective influence of the mucus secreted along the gastro-intestinal canal is an undoubted aid in the resistance of the wall to digestion, but it scarcely seems adequate to furnish the complete immunity that prevails year after year under most trying conditions of digestive danger.

Dr. Claudio Fermi of Sassari has kept numerous aquatic forms of life, such as protozoa, worms, crustacea, and insects, alive without harm in solutions of trypsin. During an entire month the tiny bit of almost naked protoplasm constituting an infusorian was unharmed by a solution of this enzyme which would speedily dissolve a large mass of coagulated protein. Shall we explain the immunity as due to antiferments, protective membranes, decreased permeability of the cells—or shall we uncover our ignorance and say, as did Hunter more than a century ago, that these living cells remain intact under such circumstances "because they are alive"?

1. Fermi, C.: Zentralbl. f. Bakteriol., 1910, lvi, 55; Arch. d. farm. sper., 1911, x, 449; Zentralbl. f. d. ges. Biol., 1912, xiii, No. 369. Oppenheimer, C.: Die Fermente, 1910, 270.

2. Langenskiöld, F.: Ueber die Widerstandsfähigkeit einiger lebender Gewebe gegen die Einwirkung eiweissspaltender Enzyme, eine experimentelle Studie, Skandin. Arch. f. Physiol., 1914, xxxi, 1.

Current Comment

BACILLUS-CARRIERS AMONG ANIMALS

The wide-spread attention which has in recent years been given to the existence of "bacillus-carriers" is beginning to serve a useful purpose in elucidating the diseases of animals as well as those of man. The careful studies of Rettger and others on the bacillary "white diarrhea" of young chicks have shown conclusively that infected ovaries constitute the real source of infection in this disease, the responsible organism, *Bacillus pullorum*, being retained in the egg and thus transmitted to the developing chick.[1] Among the more plausible explanations of the way in which the ovarian infection can be produced, it has been assumed, in the light of what is known regarding the carrier conditions in typhoid fever, that chicks which recover from an attack of white diarrhea may continue to harbor the specific organism for a long time, or perhaps permanently, without revealing any untoward symptoms of the disease. Following this point of view, when maturity is reached the hitherto latent infection may be assumed to become actively centered in the ovary, especially in consideration of the intense physiologic activity occurring there during egg production. An obvious alternative explanation of the presence of the organism in the ovaries lies in the possibility of infection after maturity, through the droppings of diseased chicks or through the agency of transmission by lice or mites. An important link in the chain of evidence needed to complete the cycle of infection has at length been obtained by Rettger, Kirkpatrick and Jones.[2] They have demonstrated experimentally that female chicks which are infected with *B. pullorum* when small may develop into permanent bacillus-carriers and be a constant source of danger to young and old stock. This carrier condition may be established in fully 25 per cent. of an infected flock. We have in these investigations, which are likely to furnish methods for averting losses which run into thousands of dollars in the animal industry, an excel-

1. See Storrs Agricultural Experiment Station, Bulls. 60, 68 and 74. Also Gage: Jour. Med. Research, 1911, xxiv, 491; Ann. Rep. New York State Vet. Coll., Ithaca, N. Y., 1910, p. 111, and 1910-1911, p. 69.

2. Rettger, L. F.; Kirkpatrick, W. F., and Jones, R. E.: Bacillary White Diarrhea of Young Chicks, Storrs Agricultural Experiment Station, Bull. 77, 1914, p. 263.

lent illustration of the far-reaching effect which fruitful methods of research and suggestions derived from scientific medicine may exert in the problems of commerce, just as we have repeatedly pointed out how much medicine has gained in many cases from the discoveries which have, in the first instance, been made in non-medical fields and particularly in the sciences underlying agriculture. The biologic sciences are so closely interrelated that every one of them or its applications is likely to profit by the successful pursuit of another.

BLUE MILK

Although blue milk is referred to in American scientific literature it seems to belong among the rarities in this country; whereas serious outbreaks of it have occurred in Europe, and there its appearance seems to have been of considerable practical importance. Blue milk is ordinarily understood to be due to the production of a colored pigment in the fluid as the result of the development of special micro-organisms therein. This unusual manifestation in milk was early observed and reported; but Steinhof, who was able in 1838 to cause its disappearance by the use of disinfectants, was apparently the first to recognize the presence of an infectious material. The well-known bacteriologist Hueppe was the first to obtain a blue-milk organism in pure culture, in 1884, so that evidently the investigation of the subject goes back to the early days of bacteriology when this modern science was still in the formative period. There is a possible ground for misunderstanding as to the nature of the phenomenon. According to some,[1] milk may have an abnormal blue appearance due to other causes than the growth of micro-organisms therein. We are told that milk which had been allowed to stand in iron dishes for several hours had a peculiar bluish-gray color, indicating the presence of iron in solution. A number of investigators have maintained that the consumption of certain plants by milk-producing animals may result in an abnormal blue color in the milk secreted, but the data along this line are more or less conflicting. There seems to be no doubt, however, that the abnormal appearance of a blue color in milk is, in the great majority of cases, caused by the growth of micro-organisms in the milk. The appearance of a few isolated samples of blue milk which recently reached one of our Western experiment stations has afforded an opportunity for a new investigation of this uncommon phenomenon.[2] The organism isolated from the milk and proved to be responsible for this "outbreak" was the *Bacillus cyanogenes*, the same organism that has been isolated in other instances of blue milk. The fact that in the Iowa manifestations the trouble occurred in only two households out of eighteen served from the same dairy, and that these two were quite closely associated, indicates that the infection of the milk took place in the household. This explanation is also suggested by the failure of the blue milk to appear at the dairy farm, except in a pan brought from the home of one of the customers having the trouble. As far as is known, this organism is entirely harmless, and milk which is turned blue by it is objectionable only on account of its color.

1. Olson: Rusty Cans and Their Effect on Milk for Cheese-Making, University of Wisconsin Exper. Station, Bull. 162.
2. Hammer, B. W.: A Bacteriological Study of Blue Milk, Iowa Agricultural Experiment Station; Research Bull. 15, 1914, pp. 467-481.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

Two things have happened recently in the medical journal field that merit a passing notice because of what they may indicate for the future. This comment deals with one of them. Three weeks ago an item appeared in our News Department to the effect that a new journal had appeared in New Orleans and that it was to be the official organ of the Louisiana State Medical Society. The item might have stated also that it was to be the official organ of the Pan-American Medical and Surgical Association — a new society just organized in New Orleans. This is incidental. We are at this time concerned with a different factor connected with this new venture in medical journalism. In his address, at the last annual meeting, the president of the Louisiana State Medical Society presented certain specific objections to the *New Orleans Medical and Surgical Journal* as the official organ of the society. The first objection was:

> "The carrying of unethical advertisements, condemned by the Council of the A. M. A., which should have terminated the contract long since, as it reflects discredit on every ethical member of the organization."

Among the recommendations was this:

> "The Society should undertake the publication of its own journal. . . . The advertisements to be strictly ethical and in conformity with the recommendations of the Council of the A. M. A."

While this recommendation that the state society publish its own journal was not adopted, another was adopted, reading:

> "That if this latter be deemed inexpedient that a contract be entered into with any ethical, live medical journal . . . provided . . . that its advertising columns contain no matter condemned by the Council of the A. M. A."

There were objections to a continuation with the *New Orleans Medical and Surgical Journal* other than the one mentioned; still this was an important one, and probably had as much influence as any other in swaying the vote. Thus the new *Pan-American Surgical and Medical Journal* becomes the recognized organ and receives the endorsement of the Louisiana State Medical Society. The *New Orleans Medical and Surgical Journal* that is thus superseded is the second oldest medical journal in the United States. For eighty years it has stood for the better things in scientific medicine and in the medical profession — in its reading pages. Until recently it was easily the leading medical journal of the South and had few equals in the North. If its good name and prestige are to be regained and retained it will be when it recognizes that in modern medicine, and among an enlightened medical profession, the fraudulent nostrum has no place, and cannot be tolerated in the advertising pages of scientific publications.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

The other incident referred to in the preceding comment occurred, not in the sunny South, but in conservative New England. The Massachusetts Medical Society has heretofore had neither a journal of its own, nor an official organ; it has issued its own publications in book or pamphlet form. For some time, however, the society, through its council and special committees, has considered the advisability of journalizing its transactions. These deliberations finally resulted in the adoption of a plan by which the *Boston Medical and Surgical Journal* becomes the official organ of the society. This is announced in the issue of the *Journal* for July 2, in which appears the annual address of the president, who discusses the question. He says:

> This project has been made possible by the generous and public-spirited attitude of the owners of the *Boston Medical and Surgical Journal*. . . . They agree that should this enterprise prove to be a source of income above the expense of maintenance, they will not derive any pecuniary benefit, but that all profit will be devoted to improving the quality and quantity of the journal.

Editorially we are told that "an advisory board of four from the Massachusetts Medical Society will later be appointed to act in conjunction with the three owners." Thus, though not actually owning the journal, the society will have a controlling voice in its management. Nothing has been published thus far regarding the question of advertising, but we understand that the new owners (who have only recently purchased the journal) have expressed themselves that the principles governing the advertising pages will be in accordance with those advocated by the great majority of our profession, and in consonance with scientific medicine. The *Boston Medical and Surgical Journal* is the oldest medical journal in the United States. Like its New Orleans namesake, it has a history to be proud of, and one of which the profession of New England is proud. From this new arrangement, and because of the new spirit that is to control the business side, we may be sure that the prestige of the past will be maintained; also, that no longer will its advertising pages be disgraced with nostrums that an enlightened profession can no longer tolerate. We heartily congratulate both the *Journal* and the Massachusetts Medical Society.

The State Society and Its Medical Journal.—The value of state society ownership of its medical journal is apparent in that the state has full control over the character of advertising and over the ethical question. Most of the state societies have a medical defense feature so that a state medical society becomes a business organization for the development of ethical and business problems which confront the profession. Men who have had a watchful eye on the evolution taking place in the practice of medicine, come to realize more and more the importance of studying economic problems relating to the profession. We take into account therefore protection against the tendency to malpractice suits due to the fact that the business world is now holding the doctor to a stricter accountability for his work. In addition to this is the development of industrial problems in which the doctor now finds himself to be an important factor, and perhaps the most helpless one on account of his inexperience in business matters and his willingness to become a secondary factor in our industrial evolution.—Editorial *Jour. Iowa State Med. Soc.*

Medical News

ALABAMA

Must Build New Prison.—Dr. William H. Oates, Montgomery, state prison inspector, after having exhausted all other means, has delivered to the board of revenues an ultimatum, that a new jail must be built for Jefferson County, failing which the prisoners will be removed to the state prison at Wetumpka. Dr. Oakes states that he has been vainly trying for the last two years to get Jefferson County to correct the situation which exists at the county jail.

University Items.—The annual address before the graduating class of the School of Medicine of the University of Alabama, Mobile, was delivered by Surgeon-General William C. Gorgas, U. S. Army.——Dr. J. Howard Agnew, formerly first assistant in the department of medicine of the University of Michigan, Ann Arbor, has accepted a full-time professorship at the University of Alabama.——Dr. William H. Clarke has been appointed a full-time professor in the department of anatomy.

CALIFORNIA

New Officers.—The Medical Symposium Society at Los Angeles, June 30: president, Dr. Edwin H. Wiley; secretary-treasurer, Dr. Michael S. Creamer. Dr. Van Noorden, Jr., of Vienna, delivered an address at this meeting.

One Day a Month at State Hospital.—Plans are being made by Superior Court Judges Grant Jackson and Willis I. Morrison to call a conference of southern California physicians to arrange for visits to the state hospital, Patton. The plan as formulated is to select a certain number of physicians, each of whom will devote one day each month to consultation with the hospital staff. At present there are five physicians and 2,100 patients in the hospital.

COLORADO

Health Department Endorsed.—The committee which the Pueblo County Medical Society appointed to make a thorough investigation of the health department of Pueblo, has reported as strongly endorsing the city commissioner and the City Health Department.

Personal.—Dr. Earl D. McGill, Wray, was shot and seriously wounded in an altercation, July 2.——Dr. Frank Smith, Longmont, who was operated on recently at the Longmont Hospital, is reported to be convalescent.——Dr. H. A. Hook, Loveland, was seriously injured in a runaway accident, June 30.

ILLINOIS

Personal.—Dr. E. Vincent Hale, Anna, announces his retirement from active practice.——Drs. William L. Gray, Champaign, and James S. Mason, Urbana, have sailed for Europe.——Dr. George H. Lee, Kankakee, is seriously ill with septicemia, due to an infected wound of the thumb.——Dr. Ralph B. McCleary, Monmouth, is reported to be seriously ill.

Health Center Established.—A health center for an entire township, including the towns of La Salle, Peru and Oglesby, has been established at La Salle with a high school and social center. This enterprise has been undertaken by a public-spirited citizen of La Salle. Physicians, school nurses and sanitary police will be provided, schoolchildren will be inspected, and the milk-supply of the three communities will be under control. The social settlement will include people's institutions with swimming-pools, libraries, reading-rooms, etc.

Chicago

Alienists and Neurologists Meet.—The national convention of alienists and neurologists was held under the auspices of the Chicago Medical Society this week. Institutional care, the teaching of sex hygiene and sterilization were put forward as the best means of remedying the increase of insanity in the United States.

Health Conditions in Chicago.—The *Bulletin* of the Chicago School of Sanitary Instruction for July exhorts the citizens to clean up and drive out the rats. This measure is prompted by the occurrence of five cases of bubonic plague in New Orleans. During June there were 67 cases of typhoid fever reported, of which number 14 were contracted outside of the city. Four were directly traced to contact with persons who had the disease. In 49 cases the sources of infection were not determined. The number of cases corresponds closely to that of 1913.

Fresh Air Stations for Sick Babies.—Fresh air stations for sick babies have been established by the Elizabeth McCormick Memorial Fund at the Northwestern University Settlement, Augusta and Robey streets, the Henry Booth House, 701 W. 14th Place, and at the House of Social Service, at 47th and Halsted streets. Dr. Frank W. Allin has charge of the medical staff of the tent system, and the nursing is under the charge of Mrs. M. Pearl Ringland of the Visiting Nurse Association. The tents are in close cooperation with the Health Department, Infant Welfare Society, Visiting Nurses, Tuberculosis Hospital and all forces working for the betterment of infant health in the city.

INDIANA

Hospital Dedicated.—The new St. Francis' Hospital, Indianapolis, was dedicated with appropriate ceremonies July 5, and was opened to receive patients July 10. The building is 197 by 48 feet, of fireproof construction, and will accommodate one hundred patients.

Personal.—Dr. Eugene B. Mumford, Indianapolis, has returned from six months' service as house surgeon in the Children's Hospital, Boston.——Dr. Robert Wagoner, Colburn, was stricken with cerebral hemorrhage, July 2.——The house of Dr. Richard B. Short, Bedford, was burned June 28.——Dr. Horace R. Allen, Indianapolis, who has been seriously ill with pneumonia, is reported to be out of danger. ——Dr. James H. Taylor, Indianapolis, who has been seriously ill with pneumonia, is reported to be convalescent.

KANSAS

Health Officer for Every Schoolroom.—The State Board of Health proposes to follow the plans adopted in the Topeka schools, of having the children of each room elect a health officer weekly. The officers selected must look after the heating, ventilation and sanitation of the room. Beside the immediate good which will develop from this system, it is believed that it will interest the children in health problems, and as a consequence will arouse interest among their parents.

KENTUCKY

Personal.—The home of Dr. Amerida M. Gross, Hazard, was burned June 18, with a loss of $3,000. Dr. Taylor Hurst, an assistant of Dr. Gross, was severely burned in an endeavor to save children thought to be imperiled by the fire.——Dr. Benjamin W. Smock, Louisville, health officer of Jefferson County, has returned from Hot Springs after an absence of four months.

University Items.—On the recommendation of Dr. Henry Enos Tuley, dean of the medical department of the University of Louisville, President A. Y. Ford of the university has announced the following appointments: Dr. Leon L. Solomon, professor of medicine and clinical medicine; Dr. David C. Morton, professor of clinical medicine; Dr. Sidney J. Meyers, professor of medicine and medical economics; Dr. Frank W. Fleischhaker, professor of physical diagnosis; Dr. Gavin Fulton, adjunct professor of pediatrics; Dr. Siegel C. Frankel, adjunct professor of medicine; Dr. Irvin Lindenberger, adjunct professor of pediatrics; Dr. Charles Farmer, adjunct professor of abdominal surgery; Dr. Guy P. Grigsby, adjunct professor of gynecology; Dr. John W. Price, Jr., adjunct professor of surgery; Dr. Oscar W. Doyle, adjunct professor of therapeutics; and Dr. F. Stuart Graves, Boston, professor of pathology and bacteriology, vice Dr. Leon K. Baldauf, resigned.——Dr. James Bruce has been appointed resident physician of the City Hospital.——The medical library of the late Dr. J. B. Marvin, consisting of more than one thousand volumes, has been donated to the medical department of the university, and added to its library.——The hospital committee of the university has recommended the equipment of a modern pathologic laboratory, and the appointment of a resident pathologist.

LOUISIANA

Pan-American Society Meets.—The Pan-American Medical Society held a special meeting in New Orleans, July 17, to which the public was invited.

Cooperative Sanitarium Incorporated.—The Attakapas Cooperative Sanitarium has been incorporated at Lafayette, with a capital stock of $30,000 "to establish and maintain a sanatorium for the treatment of disease and the care of invalids."

New Officers.—Attakapas Medical Society at New Iberia, June 10: president, Dr. Isaac T. Rand, New Iberia; secretary, Dr. Lambert O. Clark, Lafayette.——Iberville Parish Medical Association at White Castle: president, Dr. Edward O. Trahan; secretary-treasurer, Dr. Guy A. Darcantel, both of White Castle.

Model Vital Statistics Bill.—The state legislature of Louisiana has passed the Model Vital Statistics Bill; also the so-called "Printers' Ink Bill" for the regulation of advertising. This bill which was endorsed by the House of Delegates of the American Medical Association at the Minneapolis session provides that any person or firm advertising any merchandise, securities or services to the public, who shall use any form of advertising which contains any untruth or misleading statement, shall be guilty of a misdemeanor. Louisiana is the eighteenth state to adopt such a law. It has also been adopted as a city ordinance by New York, Chicago and Los Angeles, and has been introduced into congress as a national measure.

MARYLAND

Health Department Moves.—The Baltimore Health Department has moved into its new quarters in the old Polytechnic Institute building on Cortland Street.

Asks for Rat-Catcher.—Health Commissioner Nathan R. Gorter, Baltimore, has applied to the Board of Estimates for permission to employ an official rat-catcher for the city, who will help the department in preventing any possible outbreak of the bubonic plague which has already manifested itself in New Orleans.

Personal.—Drs. Joseph C. Bloodgood and Alexander D. McConachie, Baltimore, have gone abroad.——Dr. George Y. Massenburg, who recently returned from Panama City, Panama, has offered to take charge of the "mosquito brigade" for Towson. While in Panama Dr. Massenburg had an opportunity to learn the methods used there to eliminate the mosquito and will use a similar treatment at Towson.——Dr. George H. Whipple has resigned as associate professor of pathology in Johns Hopkins Medical School, Baltimore, and has been appointed director of the Hooper Institute, San Francisco. Dr. Milton C. Winternitz has been appointed to succeed Dr. Whipple.——Dr. John C. Hemmeter, Baltimore, has been elected a foreign member of the Imperial German Academy of Sciences.

Twenty-Fifth Anniversary of Johns Hopkins Hospital.—Johns Hopkins Hospital is preparing to celebrate the twenty-fifth anniversary of its opening next October. Already plans for the event are well matured and a tentative program formulated. The celebration will begin on Monday afternoon, October 5, with a meeting at the Lyric, at which Dr. William H. Welch will preside and Sir William Osler of Oxford University will speak. Distinguished foreigners and Americans who received their medical training at Hopkins have been invited and the celebration will bring to Baltimore an imposing assemblage of noted scientists. Sir William Osler will conduct a clinic while here and Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, will also return and speak. One of the most important features will be the dedication of the new Brady Urological Institute, presented by James Buchanan Brady, through Dr. Hugh H. Young, the completion of which will add another to the remarkable group of new buildings. This dedication will take place October 7. Dr. Thomas Lewis, of the University College, London, the editor of *Heart*, will deliver the lectures under the Herter Foundation at the Johns Hopkins Medical School in connection with the celebration. An interesting affair of the week will be the dedication on October 6 of the medallion in memory of Dr. John Hewetson, a former member of the staff, who died of tuberculosis while traveling abroad about four years ago.

MINNESOTA

Asks Appropriation for Sanatorium.—The Ramsey county commissioners have been asked by the board of control for an appropriation of $14,000 for expenses of the Cuenca Tuberculosis Sanatorium, a municipal institution, for the coming year.

Personal.—Drs. John H. Rishmiller and Olaf J. Veline, Minneapolis, have sailed for Europe.——Dr. Rollo C. Dugan, Winona, has been appointed superintendent of the hospital recently established at Ottawa, Kan.——Dr. Hibbard W. Hill, St. Paul, executive secretary of the Minnesota Public Health Association, assumed his duties July 1.

Memorial to Dr. Stewart.—A memorial to the late Dr. J. C. Stewart was adopted by the Board of Administration of the College of Medicine and Surgery of the University of Minnesota at its last regular meeting, July 2. The mem-

orial sets forth the dominant characteristics of Dr. Stewart, his absolute frankness of opinion and positiveness of action, his varied services to his Alma Mater, the grateful remembrance and uniform respect in which he is held by his fellow alumni, and the loss his colleagues and the university have sustained.

MISSOURI

Personal.—Dr. Willard C. Proud, Oregon, has sailed for Europe.——Dr. James L. Downing, Eagleville, announces that he will leave this fall for Brazil, again to take up his work as a medical missionary.

Property for Hospital Site Transferred.—A warranty deed conveying the title of the site of the prospective Noyes Hospital at 24th and Jones streets, St. Joseph, was filed June 24. Plans are now being prepared for the hospital and work will begin on the building before fall.

New Officers.—Northern Missouri Medical Association at Moberly, June 18: president, Dr. William H. Miller, Macon; corresponding secretary, Dr. Adrian L. Cambre, Atlanta; recording secretary, Dr. Walter D. Pipkin, Excello. The next meeting will be held in Macon.

St. Louis

Personal.—Dr. Ralph E. Kinsella has been appointed chief resident surgeon, and Dr. Benjamin W. Klippel resident surgeon to the city hospital.——Dr. and Mrs. Walter Fischel have returned from Europe.

Railway Establishes Emergency Hospital.—The Missouri Pacific-Iron Mountain System has fitted up an emergency hospital in its general offices in the Railway Exchange Building, to be operated during the heated term. Drs. Oliver B. Zeinert and William D. Petit are in charge of the hospital.

NEW YORK

New Officers.—Auburn City Medical Society, June 30: president, Dr. Alfred F. Hodgman, Auburn; secretary, Dr. George C. Sincerbeaux, Locke.

Personal.—Dr. Alice Baxter, Ogdensburg, a member of the staff of the St. Lawrence State Hospital, has resigned to accept the position of woman physician to the Pontiac (Mich.) State Hospital. Dr. Baxter was presented with a gold wrist watch by the employees of that institution.——Dr. Charles W. Mills, Loomis, and Dr. John B. Allen, Central Islip, L. I., have sailed for Europe.

Quarantine Against Jersey Horses.—At a recent conference in Jersey City, participated in by the deputy commissioner of agriculture, the mayors of Jersey City and New York, health officers and veterinarians, it was announced that a quarantine against horses suffering from glanders had been established in New York state and city, and that all the horses passing between the two states would have to be inoculated with the mallein serum, which is supplied by the government. It is stated that 6,000 horses pass back and forth daily between the two cities. All such horses must be inoculated before September 1.

New York City

New Officers.—Brooklyn Pathological Socicty, May 14: president, Dr. William Lintz; secretary, Dr. Robert F. Barber.

License Revoked.—The Board of Regents revoked the medical license of Abraham Glickstein, New York City, on complaint of the New York County Medical Society.

New York Rats Plague-Free.—Commissioner of Health Dr. Sigimund S. Goldwater, in taking precautions to prevent the introduction of plague into this city, has had hundreds of rodents trapped under the piers and along the water front. The result of laboratory examinations show that the search for the plague bacillus has given only negative results. The work of examining rats will continue as long as there is any danger of the plague being brought to this port.

Personal.—Drs. John W. Draper and Henry W. Frauenthal have sailed for Europe.——Dr. Isadore H. Goldberger has been appointed assistant director of educational hygiene for the public schools of the city of New York.——Dr. James H. Morris has been appointed superintendent of the New York Polyclinic Hospital.——Dr. C. Irving Fisher resigned, July 1, after twenty-three years of continuous service as superintendent of the Presbyterian Hospital.——Dr. James W. Shaul, specialist in diseases of the eye, ear, nose and throat, has moved to Los Angeles, Cal.

Faith Cure for Gain Unlawful.—In the Willis Vernon Cole's suit which has been before the courts for over two years, the Appellate Division handed down a decision on July 10 that "Faith cure as work for gain is unlawful." The suit was brought by the New York County Medical Society on evidence obtained by a detective employed by the society. The case will be appealed as it is held that if this ruling stands Christian Scientists throughout the state will have to close their offices. Cole acknowledged that he had never studied medicine and that he received about $6,000 per year, most of which was given him voluntarily.

New Management at the Polyclinic.—The Polyclinic Hospital is about to inaugurate a new mode of management. The board of trustees and the faculty will remain the same, with their functions unaltered, but the board of managers will be active in directing the affairs of the hospital. John Gunn who has been superintendent of the hospital for twenty years has resigned and Dr. James High Norris who has been assistant manager at the Rockefeller Institute is to be superintendent of the hospital. The board of managers is to be presided over by Dr. John A. Wyeth who is also president of the faculty.

Fewer Fourth of July Casualties.—The records for the Fourth of July in the greater city show that twenty-six persons, nearly all boys under 16 years of age were accidentally shot by revolvers and twenty-six were more or less seriously injured by fire-crackers, toy pistols, etc. No one was fatally injured and the injuries for the most part were not severe. On the Fourth of July prior to the inauguration of the Sane Fourth there were 559 persons injured and seven killed in the greater city. Each Fourth since then has seen the number decrease until in 1913 there were 65 injured and no deaths, and the present year has witnessed a further reduction of accidents of this kind.

OHIO

Change in Management.—Dr. W. Clyde Leeper has sold his interest in the Rocky Glen Sanatorium for Tuberculosis to Mrs. Adah Schafer, Cincinnati. Dr. Leeper will remain with the institution as superintendent.

Warns against Unwise Economy.—Dr. Charles A. L. Reed, Cincinnati, has issued a strenuous warning against cutting down the present force of the Cincinnati Health Department while so great a danger as that of the bubonic plague is within so short a distance from the city as New Orleans.

Personal.—Drs. William C. Herman, Cincinnati, Wilson M. McClellan, Ashland, and William W. Pennell, Mt. Vernon, have sailed for Europe.——Dr. Frank Dahinden, health officer of Canton, has resigned to take effect not later than August 1.——Dr. Charles B. Parker, Cleveland, has retired from active practice on account of illness due to overwork. ——Dr. Luke V. Zartman has been appointed local surgeon for the Baltimore & Ohio system at Columbus, to succeed the late Dr. Sherman Leach.

Hospital Council Organized.—The organization of the Cleveland Hospital Council was perfected at a meeting held June 15. The council is composed of two representatives of each of the fifteen general hospitals of Cleveland, and its duty is to decide definite policies and lines of action as regards the economic and social services of its members. Arthur D. Baldwin, of the Babies' Dispensary and Hospital, was elected president; Dr. James E. Cogan, St. Alexis' Hospital, vice-president; Dr. Andrew R. Warner, Lakeside Hospital, secretary, and Dr. John Annisfield, Mt. Sinai Hospital, treasurer.

Trachoma in Children's Homes.—Dr. Thomas A. Copeland, a physician in Athens, whose practice is limited to diseases of the eye, ear, nose and throat, recently discovered twenty-four cases of trachoma among the eighty-one inmates in the Children's Home. These cases were all recent, and none of the usual complications had as yet occurred. An inspector of the State Board of Health confirmed the diagnosis and went before the trustees to instruct them as to the steps necessary to restrict the spread of the disease. Dr. Copeland was appointed to treat the cases, and a nurse was also appointed to oversee the general campaign in the home. Separate towels, wash basins, wash rags and other toilet utensils are being provided for the affected children and as much isolation as possible is being practiced.——Miss Greene, a representative of the Ohio Commission for the Blind, brought two cases of trachoma from the Pike County Children's Home at Waverly to the Children's Hospital at Columbus. One of the patients is suffering from entropion and the results of corneal ulcer. Dr. Schafer will operate on the patients at once. As a result of finding trachoma in these two county homes, the Division of Communicable Diseases of the State Board of Health proposes to make a survey of all county homes to determine the presence or absence of trachoma among the inmates.

PENNSYLVANIA

Pasteurization Rule to Be Strictly Enforced.—On July 1 Director Richard Harte announced that the Department of Health would rigidly enforce the new rules requiring that all milk sold in bottles in the city shall be pasteurized unless produced under approved sanitary conditions. On June 30 Judge Sulzberger refused to issue an order restraining the Board of Health from putting into effect the rule for the pasteurization of milk.

New Hospital Building.—On June 29 ground was broken for an addition to the American Oncologic Hospital, the only institution in the state which treats cancer in advanced stages. The new building, a two-story structure with basement, will cost $21,000. The first floor will be used as an operating room; the second floor to be known as the Banks Memorial Ward, will contain four rooms, for two female patients each, and the basement will be devoted to x-ray and radiographic work.

Physical Test for Child Workers.—After July 6, every child in this city under the age of 16 is required to pass a rigid medical examination before being granted a certificate to work. The examination will be conducted by physicians working under the auspices of the State Department of Labor. According to Henry J. Gideon, chief of the Bureau of Compulsory Education, authority for the regulation is provided by the Child Labor Act of 1909, which declares that only children who are "physically able" shall have labor certificates.

Personal.—Dr. Henry Osborne Beattie, Pittsburgh, and Malcolm Z. Gearhart, Reading, have sailed for Europe.——Dr. Henry B. Burns has been appointed head of the department of school hygiene of Pittsburgh.——Dr. Walter A. Yeakle, Norristown, has been appointed medical officer of the new cruiser recently built in Camden, N. J., for the Greek navy, and will accompany the cruiser on her maiden voyage.——Dr. Clyde R. McKinnis, resident physician of the male department of the Norristown Hospital for the Insane, has resigned to become medical director and superintendent of the Marchaise Hospital and Home, Pittsburgh.——Dr. Laverne D. Paige, Corry, was seriously hurt July 3, by the overturning of his automobile.——Drs. Edward Stieren and James D. Heard, Pittsburgh, have sailed for Europe.——Dr. Andrew Peter D'zumra, Braddock, has been appointed a fellow in internal medicine in the University of Pittsburgh.

Philadelphia

Personal.—The following physicians have sailed for Europe: Drs. Thomas E. Eldridge, William W. Sweet, William Zentmayer, Edward E. Montgomery, James M. Anders, William E. Hughes and T. Hewson Bradford.——Dr. J. Leo Donahue has been appointed assistant to the head of the insane department at Blockley.——Dr. William H. Walsh, for two years superintendent and medical officer of the Municipal Hospital, has been elected medical administrator of the new Children's Hospital. He will enter on his new duties October 1.——Dr. Philip H. Moore has been elected a member of the select council for the Forty-Fourth Ward.

WISCONSIN

Maternity Ward for Mount Sinai.—A maternity ward is being erected for Mount Sinai Hospital, Milwaukee. The building is five stories in height and will cost about $125,000, of which $100,000 has already been donated.

Sanatorium for Brown County.—A resolution was passed by the Brown County Board of Supervisors at its meeting, June 13, approving all contracts let by the sanatorium committee, and providing that the payment of $25,000, raised last year for the purpose of erecting a tuberculosis sanatorium be applied to this purpose as soon as the money is needed.

Personal.—Dr. Thomas W. Nuzum, Janesville, has sailed for Europe.——Dr. Carrie A. Frost, Chippewa Falls, has been appointed a trustee at the Lawrence College, Appleton.——Dr. Henry W. K. Abraham, Appleton, has been elected president, and Dr. John M. Beffel, Milwaukee, reelected secretary-treasurer of the State Board of Medical Examiners.——Dr. William C. Watkins, Oconto, has been appointed first lieutenant, M. C., N. G. Wis.——Dr. Walter W. Peck, Darlington, has been appointed local surgeon of the St. Paul System.——Dr. Alphons M. Kersten, De Pere, fell while making a professional call, July 4, dislocating his left ankle.

GENERAL

Meetings at Sioux Falls.—The Northwestern Oph-Lar-Rhin-Otic Society will hold its semi-annual meeting at Sioux Falls, S. Dak., July 23.——The annual meeting of the Sioux Valley Medical Society will be held at Sioux Falls, July 22-23.

Indian Service Physicians Confer.—A conference of the physicians of the U. S. Indian Service of the Northwest was held at the Fort Lapwai Indian Sanatorium, Fort Lapwai, Idaho, June 23-25, 1914. The conference was directly under the charge of Dr. Joseph A. Murphy, medical supervisor, U. S. Indian Service. The first days was devoted to tuberculosis, with Dr. John N. Alley, superintendent of the sanatorium as chairman; the second day to trachoma, with Dr. W. H. Harrison, ophthalmologist of the Indian Service as chairman, and the third day to oral hygiene and general infectious diseases, with Harry L. Hale, D.D.S., of the Indian Service, chairman. After a general discussion of all the medical problems of the Indian Service, the conference adjourned to meet in Denver, in 1915.

The Plague.—A telegram from New Orleans, July 14, states that the United States Public Health Service, with Assistant Surgeon-General William Colby Rucker in command, assumed control of the plague situation in New Orleans, July 8. The headquarters at 163 Dryades Street, are outfitted and opened. One hundred and sixty men, provided by the city for clean-up work, have been placed under the orders of the public health officials, and assigned to work in gangs of eight along the river front. Dr. Ruckers' staff is as follows: Surgeon Richard H. Creel, executive officer; Passed Assistant Surgeon Friench Simpson, in charge of field work; Assistant Surgeon Charles L. Williams, bacteriologist; Surgeon Gustave M. Corput, in charge of outgoing quarantine; Assistant Surgeon C. V. Akin, in charge of infected districts; Acting Assistant Surgeon Howard D. King, inspector of dead, and W. H. Keen, pharmacist. Surgeon-General Blue has ordered the United States Quarantine Steamship *Neptune* from Philadelphia to New Orleans, July 10. She is in command of Captain C. H. Bartlett and Passed Assistant Surgeon Norman Roberts, who will superintend the work of fumigation. This vessel is outfitted with the Harker carbonmonoxid apparatus for rapid deratization of ships. Since the last report, two cases of human plague have been reported, the fourth and fifth since the disease was discovered. Case number 4 is Leon Dejan, colored, male, 28 years of age, married, residing at 2227 Stann Street, employed in a wholesale produce house at 429 Poydras Street, who was taken ill July 5, and died in the Plague hospital, July 9. This case was one of right axillary bubo with secondary plague pneumonia. The fifth plague case was Elizabeth Domingo, a colored female, aged 35, married, living at 1902 Agricultural Avenue, corner of Allen Street, who had worked at 307 Lafayette Street, where sick and dead rats were seen July 10 and 12; sickened July 9, and was removed to the Isolation Hospital, July 12, with a left femoral bubo. In both cases the diagnosis was positively confirmed bacteriologically. Elizabeth Domingo received 120 c.c. of Yersin serum, and appears to be doing well. The second case of the series, Wilkinson, is convalescent. The total number of cases to date is five, with three deaths. Intensive rat trapping is being carried out in the area bounded on the north by Louisa Street, on the south by Napoleon Avenue, on the east by the water front, and on the west by Camp and Rampart streets. All trapped rats are being examined in the laboratory, but no positively plague-infected rodents have been reported. Precautions are also being taken to prevent the escape of rats to vessels, and the possibility of the spread of infection by river traffic. All vessels leaving New Orleans with certificates of the Public Health Service have been fended off 8 feet from the dock; 36-inch rat-guards applied effectively to hawsers; gangways continuously guarded, and the vessels fumigated with 4 per cent. sulphur-dioxid gas before loading. In other words, the federal quarantine regulations are being rigidly enforced. The campaign of education and publicity is going forward rapidly, and the newspapers are giving hearty cooperation. Meetings have already been held with the Civic Federation, Orleans Parish Medical Society, port commissioners, board of directors of cotton exchange, board of trade and in several negro churches. Four or five meetings will be held daily until the propaganda of education has reached the entire population. The Board of Health, on July 14, passed the rat-proofing, fending-off, chicken and garbage-can ordinances, prepared by the officers of the Public Health Service. The police department is cooperating in the enforcement of the garbage-can law. Inspection of all dead bodies prior to embalming has been instituted. This inspection is made from 6 a. m. to 9 p. m. by the inspectors of the dead, Acting Assistant Surgeon Howard D. King, U. S. P. H. S., and Dr. Sidney Dale Porter of the Louisiana State Board of Health. Reports of all cases and the progress of the work are for-

warded promptly to the various consular officers in New Orleans. This action has had a beneficial effect in preventing quarantine by other countries. The New Orleans Civic Federation has appointed committees made up of representative women of the community on hotels, restaurants and markets to cooperate in the campaign.

CANADA

Cabinet Changes.—Of three members in the Ontario cabinet, the Hon. Dr. Robert A. Pyne, Minister of Education, and the Hon. Dr. Preston were reelected in the recent Ontario elections, while the Hon. Dr. Joseph O. Reaume, Windsor, Minister of Public Works, was defeated.

Provincial Association to Meet.—The annual meeting of the Saskatchewan Medical Association will be held in Saskatoon, August 18-20. Dr. George R. Peterson, Saskatoon, is president. Dr. Arthur Wilson, Regina, recently resigned as secretary and has been succeeded by Dr. J. T. McKay.

Infant-Welfare Work.—The Toronto Board of Health has appointed a medical director and thirty-one nurses in connection with infant-welfare work. Several baby clinics and milk depots have been established, and the Department of Health keeps in touch with birth registration. Literature is sent to and nurses visit the mothers.

Personal.—Dr. William P. Caven, Toronto, is in Europe. ——Dr. Albert E. Vipond, Montreal, has returned from conducting a series of experiments on pellagra at Columbia University.——Dr. Agatha Doherty, Toronto, has been appointed house surgeon at the new London Hospital for Women.——Dr. John W. McIntosh, Vancouver, B. C., has been appointed associate professor of chemistry and acting head of the department in the University of British Columbia.

Ontario Medical Council.—The Ontario Medical Council met in Toronto during the week ended July 11. The most important item of business transacted was the adoption of a resolution pledging the council to approach the Ontario legislature to secure legislation defining the phrase "the practice of medicine" in the province of Ontario. This will be presented to the government by the executive committee, legislation committee and representatives of the teaching body. Dr. James MacArthur, London, Ontario, was elected president, and Dr. John L. Bray, Toronto, was reelected registrar.

FOREIGN

Death of Duguet.—Dr. Nicolas Jean-Baptiste Duguet, vice-president of the Academy of Medicine of Paris, commander of the Legion of Honor, died in Paris, July 4, aged 77.

Chinese Physician Visits Hospitals.—Dr. Lew Chee, Peking, China, is making a tour of the United States, inspecting local hospitals to gain ideas to be used in the construction and management of a hospital to be built in Canton next year at a cost of $750,000.

LONDON LETTER

LONDON, July 4, 1914.

Royal Commission on Venereal Diseases

At the forty-first meeting of the Royal Commission on Venereal Diseases, evidence was given by Mr. J. Smith Whitaker, medical member and deputy chairman of the National Health Insurance Commission. He explained the working of the panel system and said that an insured person suffering from venereal disease was entitled as part of his medical benefit to receive medical treatment exactly in the same way and to the same extent as other diseases. The position of the insured as regards the adequacy of the treatment when suffering from these diseases did not differ substantially from that of the ordinary population when under the care of general physicians, and in cases requiring treatment by specialists, the two sections of the population stood exactly on the same footing. With regard to sickness benefit—that is, periodical payments made to the insured person while rendered incapable of work by some specific disease—it was possible for an approved society to provide by its rules for the withholding of this benefit in cases in which the sickness was caused by the insured person's own misconduct, and this applied to many cases of persons suffering from venereal diseases. It was the usual practice, and had been for many years, for societies to class venereal diseases as a disease caused by misconduct. Mr. Whitaker thought that provision made for the treatment of particular diseases or particular groups of persons should be looked at not only from the point of view of those diseases of those persons but also from the broad point of view of the relation of that administration to the whole body of treatment of all kinds throughout the country. Any scheme of administration that might be devised, for example, for dealing with venereal diseases should be so framed that it would develop the abilities of physicians and make them more efficient for their general functions as the first line of defense of the country.

The Developments in the Medical Service of the Insurance Act

The British Medical Association is much concerned as to possible developments in the medical service under the insurance act, particularly the introduction of a whole-time medical service. This is advocated by socialistic politicians who use as one argument the excessive claims for sickness benefit which have been made in certain societies. For this physicians are blamed for being too complaisant in granting certificates. It is urged that if they were the servants of the state there would be no motive for gaining favor with patients in this way. It is also suggested that the different branches and specialties of medicine should be dealt with by whole-time specialists and that in this connection the state could take over the hospitals. If a whole-time medical service were established it is not conceivable that it would be limited to the insured alone; their dependents would certainly be included, and thus the whole population, excepting the wealthy, would be brought under the system. Such a development would certainly be unwelcome to the profession. It is not likely to occur in the near future, but one who studies political tendencies need not be a bold prophet to say that it is a perfectly certain goal. What the association is most concerned with now are certain minor developments which are all in this direction. The tendency is exemplified by (1) the appointment of whole-time tuberculosis officers—the first instalment of whole-time specialists; (2) tuberculosis dispensaries; (3) the appointment of whole-time referees to investigate cases of possible malingering, and (4) the appointment of specialists to consult with the panel physician when necessary.

The Clinical Congress of Surgeons of North America

Further preparations than those announced in my previous letter have been made for this congress, which will be run on lines new to this country and essentially American. Indeed, the American managers have expressed the view that while the American surgeons are coming here to see our hospital practice we shall be shown how a congress should be run and also taught how to put to better use the unrivaled hospital material of the metropolis of the world. According to the latest estimate about 1,200 American surgeons will attend. The membership will include not only British but also foreign surgeons. The registration fee is $5, which should be sent to the London office of the congress, Wimpole St. London, W. The Congress is divided into two parts comprising a preliminary clinical program and special demonstrations. The preliminary clinical program consists of visits to be made throughout the week to a group of London general and special hospitals, where on allotted days and hours members of the staff will be present to conduct surgical clinics. At the twelve great general hospitals to which a medical school is attached and eighteen special hospitals, members of the staff, who include most of the well-known London surgeons, will be present at the times indicated in an elaborate program. A member of the congress may make his selection of the clinics which he wants to attend. He should send a written request for reserved tickets to Mr. A. D. Ballou, general manager, 1 Wimpole Street, London, W., stating his wishes. The allotted tickets, which will provide numbered seats, will be retained at headquarters up to a certain fixed time (to be determined and announced later) in the name of the applicant, and will be assigned as nearly as possible in order of application. That the applicants may not be disappointed if the tickets for their first choice are exhausted, several selections should be made. Every person who desires to attend the clinics and evening sessions must register at headquarters and secure a membership card.

In the evenings addresses and discussions according to the program previously given in THE JOURNAL will take place at the two hotels which are the headquarters of the congress. The congress is thus a purely business one. Beyond the opening ceremony, at which addresses of welcome will be given by Sir Rickman J. Godlee, president of the Royal College of Surgeons, and the American Ambassador, Dr. Page, there will be no social functions of an official nature.

PARIS LETTER

PARIS, June 26, 1914.

Latest Diminution in the French Birth-Rate

The birth-rate has continued to diminish during the last year: there are 745,539 living infants as contrasted with 750,651 in 1912. No lower total has ever been registered, with the exception of the year 1911, which was particularly deplorable. In recalling the steady fall in the French birth-rate, it will be enough to mention that the annual average of living births was 945,000 during the period from 1872 to 1875; that, since 1907 the annual number of births dropped below 800,000, and since 1911, below 750,000. This means that in less than forty years the French birth-rate has diminished by more than 200,000 a year. The proportion of living children to every ten thousand inhabitants was 188 in 1913, instead of 190 in 1912, 187 in 1911, 196 in 1910, and 205 in 1906. The decrease, therefore, is accentuated each year. It is true that the birth-rate is falling in all the large countries of Europe, but the proportion is much less than in France; and, moreover, the excess of births over deaths is proportionately five or six times greater than in our country. Thus, for the year 1912, the excess of births over deaths for each ten thousand inhabitants was only 15 in France; in the same year it was 158 in Holland; 140 in Italy; 130 in Hungary; 127 in Germany; 107 in Austria, and 105 in England.

The last year showed an excess of 41,901 births over deaths, or only 10 for each ten thousand. The excess in 1912 was 57,911, or 15 per ten thousand. There is, therefore, a diminution of one-third from one year to the next. This diminution is due to a deficit of 5,112 births and an increase of 10,989 deaths. An excess of births is recorded in 49 provinces, while in 1912 it was recorded in 56. The departments in which the birth-rate exceeds the death-rate are those of the North, Pas-de-Calais, Brittany, the frontier regions of the Northeast, Limousin and Corsica. On the other hand, the valley of the Garonne, Normandy, the plateau region of Langres and Dauphiny continue to lose ground.

The number of deaths (703,638) is greater by 11,000 than that of 1912, which was lower than any recorded number since the opening of the nineteenth century. The proportion of deaths to the population is 178: 10,000, as against 172 in 1912, 196 in 1911, and 179 in 1910. The mortality has increased in 64 departments, and particularly in Bouches-du-Rhône, Dordogne, Var, Haute-Savoie, Corsica, Somme, Haute-Vienne, l'Aveyron and Tarn-et-Garonne.

In 1913, 298,760 marriages were recorded, or 13,169 less than in the preceding year. The proportion of the newly married for each ten thousand has dropped from 158 in 1912 to 151 in 1913. The number of divorces has, on the other hand, increased by about 500; 15,076 were recorded in place of 14,579 in 1912. The increase has therefore continued; in 1900 there were but 7,157 divorces; in thirteen years the number has more than doubled. The proportion of divorces in the statistics of the population has gone from 366 per million in 1900 to 736 in 1912 and 761 in 1913.

Personal

May 17, in the halls of the hôpital Saint-Sauveur, at Lille, exercises were held in honor of Dr. Lemoine, professor of clinical medicine at that place, on the occasion of the twenty-fifth anniversary of his teaching. In the name of all his former pupils, Professor Déléarde presented Dr. Lemoine with a picture of himself, painted by the artist Pharaon de Winter.

BERLIN LETTER

BERLIN, June 26, 1914.

Prize Offered by the Robert Koch Foundation for the Tuberculosis Campaign

According to a resolution of the executive committee, adopted April 16, a prize of $750 (3,000 marks) is offered for the best article on the subject "The Importance of the Various Forms of Radiation (Sunlight, Roentgen Ray, Radium and Mesothorium) for the Diagnosis and Treatment of Tuberculosis." The articles, which must be in the German language and typewritten, must be in the hands of the secretary of the foundation, Privy Councilor Professor Schwalbe, (Berlin-Charlottenburg, Schlüterstr. 53), not later than July 1, 1915. Each article must be marked by a motto. The name of the author is to be placed in a sealed envelope and the motto inscribed on the envelope. The jury of awards consists of the president of the imperial health office Dr. Bumm of Berlin, Privy Councilor Gaffky of Hanover, Ministerial Director Kirchner of Berlin and Privy Councilor Löffler of Berlin. After the awarding of the prize, the essay passes into the possession of the Robert Koch Foundation. The publication will be made according to the conditions which are attached to all the articles published by the funds of the foundation. The article itself will appear in the *Transactions* of the Robert Koch Foundation, while a short abstract prepared by the author will be printed in the *Deutsche medizinische Wochenschrift*.

Reduction in Mortality from Tuberculosis

According to an article published in the Medical-Statistical News (*Medizinal-statistischen Nachrichten*), the number of deaths from tuberculosis in Prussia was again reduced in the year 1913, and the reduction was to a much greater extent than in the previous year. From this disease there died 56,583 persons as opposed to 59,911 in 1912 and 61,219 in 1911; that is to say, in 1912 there was only a reduction of 740 persons, or 1.2 per cent., but in 1913 the reduction was 2,328, or 5.4 per cent. The number of persons who died of tuberculosis in Prussia, as in other civilized countries where the campaign against this disease is being energetically prosecuted, has shown for many years a considerable reduction. In 1876 the number of deaths from this disease was 79,770, so that in the thirty-seven years since that time, a reduction of about 23,000 deaths has occurred. The reduction in this period of time has not been uniform; however, indeed, in some years an increase is recorded; but in general, the success of the measures which have been taken against this disease is unmistakable.

Still more important is the reduction when a comparison is made between the deaths from tuberculosis and the total population. In 1876 the relative number per ten thousand living was 30.95. In 1903, the number had already fallen to 19.70; in 1912 it was 14.59, but in 1913 only 13.58. The fact that the number who died from tuberculosis compared with the entire population has fallen more than one-half in the last thirty-five years is very satisfactory and encouraging to a further struggle against this disease.

It is noteworthy, however, that the reduction is confined exclusively to tuberculosis of the lungs, while the deaths from tuberculosis of other organs shows a tendency to rise. In the year from 1903 to 1912 (the data for 1913 are not yet at hand), the number of those who died from tuberculosis of the lungs fell from 64,310 to 52,766, that is from 18.09 to 12.85 per ten thousand inhabitants, while those who died from tuberculosis of the other organs rose from 5,739 to 7,145, or from 1.61 to 1.74 per ten thousand. It is to be assumed however, that this increase is only apparent, as it may be referred to a more exact diagnosis in determining the causes of death.

In connection herewith, it may be of interest to learn the present status of the imperial tuberculosis campaign. The German central committee for the campaign against tuberculosis comprised 1,458 members, Jan. 1, 1914. The income was $8,647 (34,590 marks) from membership dues; $16,250 (65,000 marks) from the imperial government, and $31,250 (125,000 marks) from a lottery. For the year 1914 $12,500 (50,000 marks) more have been included in the imperial budget.

The number of institutions in Germany amounts at present to 158, with 15,877 beds for adult consumptives. With an average of three months' treatment for each person, 63,500 patients can be given treatment each year. Children with pronounced pulmonary tuberculosis may be received in thirty-two children's sanatoriums with 2,092 beds. Scrofulous children and those threatened with tuberculosis are received in 120 institutions with 9,145 beds. There are 23 sanatoriums for bone and joint tuberculosis with 1,776 beds, of which 75 are for adults. The number of forest convalescent stations is 125 (occasionally night-camps are instituted). The number of open-air schools is 18. Thirty-four convalescent homes receive only cases of closed tuberculosis and only in small numbers. For the selection of patients for the sanatoriums, there are 41 observation stations. The number of stations for information and aid has risen from 1,400 to 1,900. While the tuberculosis mortality in general has been further reduced in Prussia from 13.59 per ten thousand living, as compared with 31.09 in 1875, no reduction is noted among children.

FROM THE FRONT

(From our Correspondent)

Vera Cruz, Mexico, July 3, 1914.

Dysentery among Our Troops

The health of the Army and Marine Corps is excellent, there being at the end of the week only eighty-five patients in the Army hospital and seventy-five in that of the Marines, most of them suffering from trivial complaints. The sick-rate here is rather less than the average rate for troops in the United States. During the first month, May, one death occurred from bacillary dysentery, and this case is the only fatality from disease since the occupation of the city. Two men were lost by drowning, one from a fall and one from an accidental pistol-shot.

During May and June, sixteen cases of dysentery occurred in the Army and approximately thirty among the Marines; three of the Army cases and four among the Marines were amebic, the remainder being bacillary of a rather severe type. The onset is abrupt, and in a day or two the patient is profoundly prostrated, having twenty or more evacuations daily; the face and hands are drawn and pinched and suggest Asiatic cholera. The prostration becomes extreme and the patients deeply toxic. The stools consist of blood, mucus, epithelial cells, both singly and in large sloughs, and are without a trace of fecal matter or bile. The duration of the disease seems to be from two to four weeks. A few cases were treated with antidysenteric serum, but without other result than the production of annoying urticarial eruptions. The first few patients received opium in various forms at some stage of the disease and did not do so well as the later patients who were treated by Buchanan's method, with small doses of salts at frequent intervals, until such time as the stools lose their dysenteric character. Because of either milder infections or improved treatment the later cases have been, on the average, much less severe.

The complications are frequent and involve the nervous system and the synovial membranes. One patient developed an irregular, temporary hemiplegia, with loss of the power of speech; one a peripheral neuritis; one showed convulsions and active, maniacal delirium, and two developed multiple arthritis, closely resembling acute articular rheumatism.

Amebic dysentery is less prevalent, only two recent infections having occurred in the Army and the same number among the Marines, although there have been three relapses among men originally infected in the Philippines. Thanks to the emetin treatment this disease is now readily controlled, the patients returning to normal health much more quickly than the Shiga dysenteries.

During June there were not more than one quarter as many intestinal diseases as in May, furnishing direct evidence of the efficacy of the general sanitary measures instituted by the chief surgeon.

Troops serving at outposts, at some distance from the city, have been practically free from dysentery although using the common water-supply, and there is little doubt that the diseases have been acquired exclusively by flies and contact with the natives. Dysentery, both amebic and bacillary, is called by the native physicians colitis hemorrhagica, and is a common disease among the Mexican population and constitutes one of the principal causes of death.

The Antimalarial Campaign

Malaria comes second after dysentery in its importance to the troops. To date in the Army there have been twenty cases and about the same number among the Marines; the greatest number of infections are tertian, yet both quartan and estivo-autumnal types have occurred. Cases began to appear after the middle of the first month and at first tended to increase until the results of improved sanitation began to manifest themselves; as a result there has been practically no increase during the month of June. The antimosquito campaign of the city health department is primarily for the protection of the Army and is financed entirely by the War Department, yet the municipality benefits to the same extent as the troops. The plan involves inspections both in and on the outskirts of the city, and to understand the situation a few words as to the topography of this locality are necessary. The city is shaped like a crescent, lying with its concavity to the sea, and is about 3 miles long and 1 mile broad. The central part of the city is well paved with hard asphalt, and storm sewers convey surface water by the shortest route to the harbor; at a distance from the business section the pavements are cobble-stone and there is an entire absence of storm sewers, the rain running over the surface until it reaches the business section. No pavements whatever exist in the outskirts; buildings are few and far between and there are many vacant lots and waste stretches with large and small depressions containing enough water to breed mosquitoes. For many miles along the coast the country is sandy, and Vera Cruz has long been celebrated for its gigantic sand-dunes, which lie to the westward of the town almost shutting it off from the back country. The largest of the sand-dunes, now used as outposts and observation points, cover an acre or more in area and reach a height of approximately 100 feet. Smaller dunes flank these, diminishing in size as the sea is approached. At one time the entire area now occupied by the city must have been made up of hummocks and depressions in an irregular checker-board arrangement. The rainy season begins in May and continues through October, rain falling on more than half the days in considerable quantity, averaging for the past five years 50 inches per annum. Were it not for the fact that the ground slopes gently from the base of the sand-dunes toward the sea, the difficulties of carrying off promptly this volume of water would be considerable; from the extreme end of the drianage area to the gulf there is a fall of 11 feet, and by careful grading the Health Department has already constructed or repaired a system of ditches aggregating 25 miles in extent. Many depressions and pools lying below the general level have been either filled or oiled. To construct this really complete and intricate system of surface drains, the department has employed from 200 to 400 men daily under the charge of Major Noble of the Medical Corps, and has expended approximately $5,000 during each of the past two months. Another gang of men, also under Major Noble's direction, have made frequent inspections of houses, cisterns, cesspools, courtyards, fountains, etc., and have taken measures to prevent mosquito-breeding whenever necessary.

The results have been well worth the trouble and expense since mosquitoes of all kinds have been practically absent from the city up to the present time. On the extreme limit of the military outposts, however, comes territory still in the hands of the Mexican federal troops and of course, our sanitarians are barred; as a result the men on guard, and in time that means almost every one, are badly bitten and a certain number have contracted malaria. The antimalarial campaign includes, besides the measures against mosquitoes, the daily prophylactic use of 3 grains of quinin by each man, the screening of buildings and the use of bed-nets. At present there seems to be no danger of contracting malaria unless one approaches the Mexican army lines.

Public Health and Sanitation

Responsibility for public health and sanitation in Vera Cruz passed from Mexican to American physicians when the port was occupied by the Navy, April 21. When, April 30, the sailors were withdrawn, the duties devolved on the Army. In addition to his military duties General Funston was compelled to reorganize the municipal government, using Mexican officials as far as possible. Of the various departments only those dealing with sanitation need be considered. The chief surgeon of the expeditionary forces, directly responsible to General Funston, is Colonel H. P. Birmingham, Medical Corps, U. S. A., who has arranged all public health matters into three distinct departments dealing with military, civil and quarantine matters. The military division is directed by the chief surgeon in person; the civil department of public health is in charge of Major Theodore C. Lyster, Medical Corps, while the head of the quarantine service is Dr. von Ezdorf of the United States Public Health Service. Before the arrival of Colonel Birmingham May 13, the quarantine department was in charge of Dr. von Ezdorf, and for a short time, of Dr. Guiteras, both of the Public Health Service.

Vaccinating an Entire City

Among the Mexicans the principal diseases are tuberculosis, dysentery and other intestinal diseases, measles and particularly, small-pox. During May there were twenty-two cases of small-pox with seven deaths, and during June, twelve cases with four deaths, the last case being reported June 21. No cases whatever have occurred among the American troops. The Health Department began general vaccination May 18, with virus obtained from the United States, and up to June 30 had vaccinated 41,404 persons. Fifty per cent. of all vaccinations have been successful, and among children, the primary vaccination has succeeded in between 80 and 90 per cent.

Since the total population is less than 60,000, the vaccination of the entire city will soon be completed and small-pox will be a thing of the past. Already two weeks have passed since the development of the last case.

Marriages

EDWARD JOSEPH GUNGLE, M.D., Casa Grande, Ariz., to Miss Eleanore F. Hartmann of Philadelphia, at Casa Grande, June 25.

ALEXANDER LIVINGSTONE MACLENNAN, M.D., Raymond, Wash., to Miss Exie Moore of Vancouver, Wash., June 30.

G. EARL LOW, M.D., Klein, Mont., to Miss Ethel Mae Templeton of Spray, Ore., at Helena, Mont., June 29.

GEORGE THOMAS HEGNER, M.D., Appleton, Wis., to Miss Florence T. O'Brien of Fond du Lac, Wis., June 25.

EDWARD FRANCIS TIMMINS, M.D., Boston, to Miss Mary Frances O'Meara of Roxbury, Boston, June 30.

ALBERT ERNEST PERRON, M.D., to Miss Helene Abigail Dubuque, both of Fall River, Mass., June 23.

EDWARD ROSSETER MUGRAGE, M.D., Denver, to Miss Leah M. Troutman of Ft. Collins, Colo., June 24.

GUY STANHOPE ST. AMANT, M.D., Gonzales, La., to Miss Hilda Laville of Riverview, La., June 30.

WALTER HENRY PARKER, M.D., Boston, to Miss Etta H. Holmes of Wollaston, Mass., June 30.

ARTHUR DOLPHIE KNABB, M.D., to Miss Beulah Harlow, both of Springfield, Mo., June 26.

EDWARD JOSEPH COTTER, M.D., Boston, to Miss Mary C. Mack of Salem, Mass., June 30.

WILLIAM REDFIELD BUTT, M.D., to Miss Charlotte Fletcher, both of Philadelphia, June 30.

GILFORD B. GALLEMORE, M.D., to Miss Lilla Maude Leslie, at Houston, Tex., June 30.

HARVEY SHOEMAKER, M.D., to Mrs. Anne Comyns, both of Philadelphia, June 25.

Deaths

Joseph William Gleitsman, M.D. University of Wurzburg, Germany, 1865; a Fellow of the American Medical Association and New York Academy of Medicine; surgeon in the German army during the Schleswig-Holstein Campaign and the Franco-Prussian War; formerly president of the American Laryngological Society; emeritus professor of laryngology and rhinology in the New York Polyclinic Hospital, and laryngologist and otologist to the German Hospital and German Dispensary; died at his home in New York City, July 2, aged 73.

William Govans Ridout, M.D. College of Physicians and Surgeons in the City of New York, 1866; for several years a member of the board of governors and visitors of St. John's College, Annapolis, Md.; also a graduate in law; a veteran of the Civil War, in which he served in the United States Navy; once health officer of Annapolis; died at his home in that city, June 29, from the effects of a fall downstairs, in which he fractured his hip, aged 78.

Michael Joseph Brown, M.D. Jefferson Medical College, 1893; and five years later instructor in anatomy in his Alma Mater; LL.B. and LL.M. of Notre Dame University in 1897; professor of classics and science in Columbia University, Ore., in 1898; and professor of English and Law in Havana during 1909 and 1910; died at his home in Kensington, Philadelphia, June 27, from heart disease, aged 70.

Franklin Garcelon, M.D. Medical School of Maine, Brunswick, 1870; formerly a member of the American Medical Association; district surgeon to the San Pedro, Los Angeles, and Salt Lake Railroad, with headquarters at Pomona, Cal.; dean of the profession of Pomona Valley; died in the Pomona Valley Hospital, June 24, after a long illness, aged 66.

Hugh Wythe Davis, M.D. Medical College of Virginia, Richmond, 1861; a member of the Medical Society of Virginia; one of the most prominent practitioners of Richmond; assistant Surgeon General in the Confederate service during the Civil War; a trustee of Richmond College; died at his home in Richmond, Va., June 29, aged 73.

William T. Rinehart, M.D. Jefferson Medical College, 1886; a Fellow of the American Medical Association; and a pioneer practitioner of Ashland, Wis. where he established the Rinehart Hospital; once Health Commissioner of Ashland; died in Augustana Hospital, Chicago, July 1, aged 58.

Thomas Dade Palmer, M.D. Jefferson Medical College, 1871; a Fellow of the American Medical Association; surgeon to the Florence and Cripple Creek Railroad, and to the Colorado State Penitentiary, Canon City; formerly physician of Fremont County; died at his home in Canon City, Colo., June 5, aged 64.

Bailey P. Howard, M.D. University of Nashville, Tenn., 1861; Evansville, Ind., Medical College, 1877; one of the oldest practitioners of Owensboro, Ky.; surgeon of the Thirteenth Kentucky Cavalry, C. S. A. during the Civil War; died at his home in Owensboro, June 26, aged 78.

Harold Haines Steere, M.D. Hering Medical College, Chicago, 1903; College of Physicians and Surgeons, 1908; a member of the Illinois State Medical Society; was shot by a patient in his office in Chicago, July 13, and died a few hours later at St. Anthony's Hospital, aged 40.

Stella Blanche Nichols-Jones Nelson, M.D. Northwestern University Women's Medical College, Chicago, 1882; a Fellow of the American Medical Association; and formerly a medical missionary in China; died at her home in Oshkosh, Wis., June 25, from heart disease, aged 55.

William Holmes Yeakley, M.D. University College of Medicine, Richmond, Va., 1899; of Keyser, W. Va.; a member of the West Virginia State Medical Association; was drowned in Cow Pasture River, near Staunton, Va., June 25, after saving a woman from drowning.

James George Hunt, M.D. Eclectic Medical Institute, Cincinnati, 1849; and for a time professor in his Alma Mater, and for many a years a practitioner of Cincinnati; died at the home of his daughter in Westwood, Cincinnati, June 8, from senile debility, aged 90.

D. E. McEachern, M.D. Medical College of the State of South Carolina, Charleston, 1894, of Statesboro; a member of the Medical Association of Georgia; died suddenly, June 26, from heart disease, while making a professional call near Denmark, Ga., aged 40.

Ebenezer C. Thomas, M.D. Medical College of Ohio, Cincinnati, 1860; surgeon of the Third West Virginia Volunteer Infantry during the Civil War; died at his home in Moundsville, W. Va., June 29, from cerebral hemorrhage, aged 77.

John W. Johnson, M.D. College of Physicians and Surgeons, Baltimore, 1883; for several years township physician and director of public safety of Nelsonville, Ohio; died at his home in Nelsonville, July 1, from heart disease, aged 63.

Alonzo V. Thorpe, M.D. American Medical College, Eclectic, St. Louis, 1884; Beaumont Medical College, St. Louis, 1890; a Fellow of the American Medical Association of Jamestown, Mo.; died in California, Mo., May 18, aged 61.

Thomas William Embley, M.D. Hahnemann Medical College, Philadelphia, 1896; of New York City; one of the visiting staff of the Metropolitan Hospital; died suddenly in Plainfield, N. J., June 28, from heart disease, aged 40.

Henry Parkhurst Greeley, M.D. Chicago College of Medicine and Surgery, 1913; of Lee, Ill.; was instantly killed in a collision between the automobile in which he was riding, and a railroad train near Shabbona, Ill., July 5.

Howard King Edgerton, M.D. University of Nashville, Tenn., 1889; a member of the Tennessee State Medical Association; President of the Lebanon, Tenn., Woolen Mills; died at his home in Lebanon, July 1, aged 48.

Gordon Chittock, M.D. Rush Medical College, 1851; said to have been the oldest practitioner in Jackson, Mich.; died at his home, June 23, aged 87.

August H. Schwacke, M.D. Medical College of the State of South Carolina, Charleston, 1886; died at his home in Charleston, June 18, aged 50.

Harry George Wiest, M.D. Hahnemann Medical College, Philadelphia, 1876; died at his home in Schuylkill Haven, Pa., June 19, aged 64.

Benjamin Oliver Webb, M.D. Rush Medical College, 1878; of Los Angeles; died in that city, June 18, from general paresis, aged 60.

James H. Reilley, M.D. Albany, N. Y., Medical College, 1886; died at his home in Memphis, Tenn., June 17, aged 53.

Evelyn Briggs, M.D. Johns Hopkins University, Baltimore, 1900; died at his home in Sacramento, Cal., about May 4.

Taylor S. Mitchell, M.D. Jefferson Medical College, 1875; died at his home in Hockessin, Del., May 29, aged 61.

Frank C. Davie, M.D. Long Island College Hospital, 1876; died at his home in Angelica, N. Y., May 26.

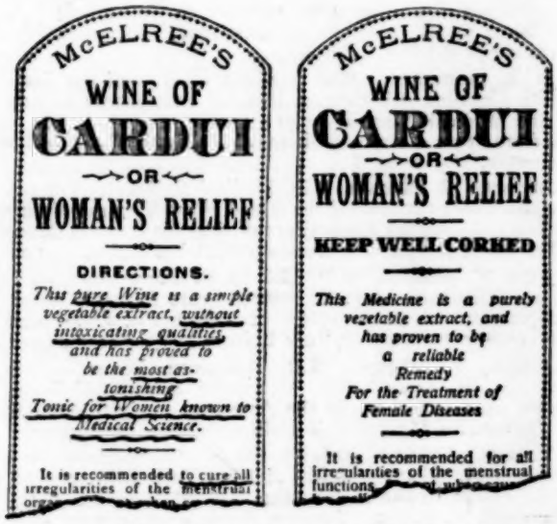
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

WINE OF CARDUI

The Journal's Position Made Clear and "An Explanation" Explained

On April 11, THE JOURNAL published an article on "Wine of Cardui," a fraudulent "patent medicine" made and sold by the Chattanooga Medicine Company. Attention was called to the fact that the chief owner of this company is John A. Patten, one of the most prominent officials in the Methodist Episcopal Church. It was shown that Mr. Patten occupied what is probably the most influential position that can be held by any layman in the church, that of chairman of the "Book Committee." The book committee is, according to the Methodist Year Book "almost a general conference *ad interim*." It has the power of fixing the salaries of the bishops, church publication editors and publishing agents,


McELREE'S
WINE OF
CARDUI
OR
WOMAN'S RELIEF
DIRECTIONS.
This pure Wine is a simple vegetable extract, without intoxicating qualities, and has proved to be the most astonishing Tonic for Women known to Medical Science.
It is recommended to cure all irregularities of the menstrual
McELREE'S
WINE OF
CARDUI
OR
WOMAN'S RELIEF
KEEP WELL CORKED
This Medicine is a purely vegetable extract, and has proven to be a reliable Remedy For the Treatment of Female Diseases
It is recommended for all irregularities of the menstrual functions

The labels on Wine of Cardui before the Pure Food Law went into effect declared that the stuff was a "pure Wine;" was "the most astonishing Tonic for Women known to Medical Science" and furthermore, that it was "without intoxicating qualities!" Compare the newer label (on right) with the old (on left). The company continued to publish falsehoods in advertisements which were not subject to the penalties of the Pure Food Law.

and of removing from office the editor of any of the official publications. It also has general supervision of the publishing financial interests of the church.

The chairmanship of this powerful committee is not the only gift of the church to Mr. Patten. He is one of the board of managers of the "Board of Education"; also, he is a member of the "Freedman's Aid Society," of the "Commission on Federation," of the "Executive Committee of the Laymen's Associations" and of the "Methodist Men's Convention"; in addition he represents General Conference District No. 6 in the "Methodist Brotherhood."

Mr. Patten's defense of the nostrum business when he spoke as the representative of the "patent medicine" men's organization (the Proprietary Association of America) was referred to in our former article. Mention was made, also, of the news item published in *Collier's* in 1912 regarding an alleged attempt on the part of the advertising counsel of the Chattanooga Medicine Company to influence public health legislation by telling newspaper men that "all advertising of proprietary medicines in New Mexico" would stop if a certain bill, that the "patent medicine" men opposed, became a law.

The older and newer claims for Wine of Cardui were compared and it was shown that while direct lies had been removed from the labels and cartons of Wine of Cardui—which would render the manufacturer liable under the Food and Drugs Act—the most outrageous falsehoods were still printed in booklets sent out to women who answered the company's advertisements. These booklets are not subject to the penalties of the "pure food law."

WINE OF CARDUI ANALYZED

The Association's chemists made a careful analysis of Wine of Cardui which we again give in order that our readers may know what was found. It should be added that since the appearance of the first article additional analyses have been made both in the Association's laboratory and elsewhere, and the findings of the chemists coincide essentially with the original findings, which read as follows:

CHEMIST'S REPORT

"The name Wine of Cardui would indicate that the preparation was made from blessed carduus (*Cnicus benedictus*) a plant variously known as blessed, cursed, spotted or bitter thistle. Wine of Cardui is a dark brownish liquid having a neutral reaction, a peculiar, valerian-like odor and a bitter, mawkish taste. The odor was not wine-like in any particular. The preparation is claimed to be purely vegetable and the presence of 20 per cent. of alcohol is declared. Arsenic, bromids, iodids, the potent alkaloids such as aconitin, morphin and strychnin, or the emodin-bearing drugs such as aloes, cascara and senna, were not found. Potassium bitartrate (cream of tartar) was absent, thus indicating the absence of wine from grapes. Alcohol was determined and 20.36 per cent. of absolute alcohol by volume was found. The volatile matter amounted to about 97 per cent. The nonvolatile residue appeared to consist of vegetable extractives. This had a bitter taste and gave very faint reactions for alkaloids. The quantity of alkaloid was too small to possess any appreciable medicinal effect, whatever its potency might be. Small quantities of a nitrate were present. Potassium nitrate is a constituent of a considerable number of plants, among which is blessed thistle. The presence of traces of this salt in Wine of Cardui does not, therefore, prove the presence of blessed thistle extractives in this preparation, although it is confirmatory evidence. A trace of combined ammonia also was present.

"It is probable that Wine of Cardui is a weak, hydroalcoholic extract of blessed thistle, containing a trace of valerian. Blessed thistle has been employed to some extent in domestic medicine as a simple bitter, but little attention is given to it by discriminating writers in materia medica. It seems probable that whatever medicinal effect Wine of Cardui may possess, is due principally to its alcohol content."

THE EFFECTS OF THE FIRST ARTICLE

Such then, in brief, was THE JOURNAL'S original article on Wine of Cardui. In it two things were emphasized: One, the more important, the fact that Wine of Cardui is a vicious fraud; the other, that the preparation contains 20 per cent. alcohol, and, so far as the Association's chemists could discover, no other drugs in amount sufficient to give any medicinal effect.

The article brought many letters of commendation. The only protest came from the representatives of the Chattanooga Medicine Company. Two editors of official church publications called at THE JOURNAL offices and discussed the article. Both of them admitted that advertisements of Wine of Cardui were debarred from their magazines; but curiously enough both seemed much more concerned with that part of the article referring to the alcohol content of the nostrum than they did with the much graver charge of fraud. In fact, it seems that THE JOURNAL'S statement to the effect that Wine of Cardui contains twice as much alcohol as is found in champagne has elicited more comment than the charge that the stuff is an outrageous fraud on the women of the country.

PATTEN OFFERS TO RESIGN

We have learned that after the article appeared, Mr. Patten offered to resign from the various positions he holds in the church. To quote from a statement sent out by Mr. Patten himself:

"His [Mr. Patten's] first thought was to tender his resignation and this he prepared, but five representative members of the [Book] Committee, who heard of his purpose, insisted that he should not resign, stating that they had always known what his business was, and they would not consent to his withdrawal in the face of such plainly malicious charges."

THE LIQUOR DEALERS' ATTORNEY TO THE RESCUE

Although THE JOURNAL learned from other sources that action was to be brought against it for the article, no notification was received by it or its attorneys of any suit. THE JOURNAL did, however, receive a visit from Mr. Warwick M. Hough, who came as a representative of Mr. Patten and the Chattanooga Medicine Company. Mr. Hough is an attorney who is exceedingly well known in certain circles. Mr. Samuel Hopkins Adams, in *Collier's*, May 11, 1912, in calling attention to Mr. Hough's activities in behalf of the "Swamp Root" fraud—another alcohol-containing nostrum—characterized the attorney as: "Warwick M. Hough, the legal prop and bulwark of the 'patent medicine' fakers and the food adulterators."

For years Mr. Hough was general counsel for the National Wholesale Liquor Dealers' Association of America, and served, it is said, the Eastern Blenders' Association and the Distillers' Association. In the spring of 1906 he appeared as attorney for the "blended whiskey" interests before the committee that was hearing arguments preparatory to drawing up what finally became the Federal Food and Drugs Act—the "Pure Food Law."

To quote from the official record:

"THE CHAIRMAN.—We will hear you briefly. What is your name, if you please?

"MR. HOUGH.—Warwick M. Hough, of the firm of Klein & Hough, attorneys at law, of St. Louis, Mo.

"THE CHAIRMAN.—Whom do you represent?

"MR. HOUGH.—I appear for the National Wholesale Liquor Dealers' Association of America, an organization which comprises the majority of the distillers, wholesale distillers, and rectifiers of the United States; and represents, it has been asserted, almost 90 per cent. of the volume of business, a business from which the Government gets one-fourth of its entire annual income . . ."

"THE CHAIRMAN.—Are you their regular attorney, employed annually?

"MR. HOUGH.—I have been for years . . ."

In addition to his employment by various liquor organizations, Warwick M. Hough has appeared in behalf of various nostrums—largely those of the alcoholic type. His activities in behalf of "Swamp Root" have already been referred to. He also appeared before the Board of Food and Drug Inspection at Washington in behalf of "Sure Thing Tonic," a fraudulent nostrum—"alcoholic strength 50 proof." In spite of Mr. Hough's pleadings, however, "Sure Thing Tonic" was declared misbranded under the Food and Drugs Act, and its manufacturers fined. Mr. Hough also appeared before the same board in behalf of "Holland Gin," sold by the Baird-Daniels Co.

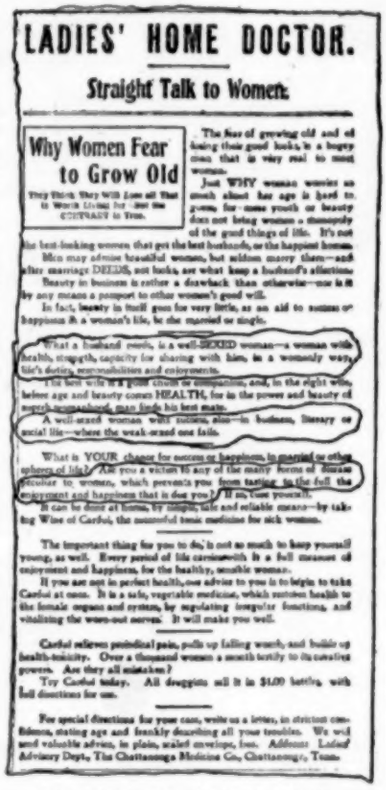
Right here let it be said that nothing THE JOURNAL may say regarding Mr. Hough should be interpreted as personal criticism. We found Mr. Hough a suave, pleasant gentleman. That he, as an attorney who has been closely identified with the liquor interests, should have accepted a commission given him by Mr. Patten and the Chattanooga Medicine Company, is not surprising; that Mr. Patten should have felt called on to employ the ex-general counsel of the liquor dealers' association may or may not be a matter for wonderment!

"AN EXPLANATION" EXPLAINED

Mr. Hough submitted that his clients protested against THE JOURNAL's inference that Wine of Cardui might be, and probably was, used as a "tipple." According to Mr. Hough the Chattanooga Medicine Company declared—although no proof was submitted—that Wine of Cardui could not be used in larger or more frequent doses than those recommended on the label, because the taste of the preparation and the alleged presence in it of an emetic principle would prevent it. These statements of the company, while not accepted as final by THE JOURNAL, were published in a brief note entitled "An Explanation" that appeared in the issue of June 6. THE JOURNAL there stated that if these allegations were true, then the term "tipple" as commonly understood, could not be applied to the preparation.

Why, it may be asked, did THE JOURNAL publish "An Explanation" if the company's statements regarding Wine of Cardui were not accepted as final? There were two reasons. The first lay in the interpretation given by Mr. Patten and his company to our use of the terms "booze" and "tipple." It was never THE JOURNAL's intention to convey the impression that Wine of Cardui is or was generally bought as whiskey is bought, that is, knowingly for its alcoholic effect; yet, according to Mr. Patten—through his spokesman the ex-general counsel for the National Wholesale Liquor Dealers' Association of America—THE JOURNAL's article was interpreted as having declared that the nostrum was so misused.

That there may be no misunderstanding as to THE JOURNAL's attitude on this question, let it be stated: We believe that the essential physiologic effect produced by Wine of Cardui is that due to the alcohol it contains. We believe further, that it is a justifiable assumption that women, unused to alcohol, taking this nostrum may, unconsciously, be led to the use of it in increasingly large doses or with increasing frequency. And this is what was meant when the inference was made that Wine of Cardui might be used as a "tipple."[1] If the alleged medicinal ingredients—other than alcohol—of Wine of Cardui were put up in tablet form Mr. Patten would never have amassed his present fortune!



LADIES' HOME DOCTOR.

Straight Talk to Women.

Why Women Fear to Grow Old

They Think They Will Lose all That is Worth Living for—but the CONTRARY is True.

The fear of growing old and of losing their good looks, is a bugaboo that is very real to most women.

Just WHY woman worries so much about her age is hard to guess, for some youth or beauty does not bring women a monopoly of the good things of life. It's not the best-looking women that get the best husbands, or the happiest homes.

Men may admire beautiful women, but seldom marry them—and after marriage DEEDS, not looks, are what keep a husband's affections.

Beauty in business is rather a drawback than otherwise—one is it by any means a passport to other women's good will.

In fact, beauty in itself goes for very little, as an aid to success or happiness in a woman's life, be she married or single.

What a husband needs, is a well-BALANCED woman—a woman with health, strength, capacity for sharing with him, in a womanly way, life's duties, responsibilities and enjoyments.

The best wife is a good chum or companion, and, in the right wife, before age and beauty comes HEALTH, for in the power and beauty of superb womanhood, man finds his best mate.

A well-poised woman will succeed, also—in business, literary or social life—where the weak-nerved one fails.

What is YOUR chance for success or happiness in married or other sphere of life? Are you a victim to any of the many forms of disease peculiar to women, which prevents you from having to the full the enjoyment and happiness that is due you? If so, cure yourself.

It can be done at home, by simple, safe and reliable means—by taking Wine of Cardui, the successful tonic medicine for sick women.

The important thing for you to do, is not so much to keep yourself young, as well. Every period of life carries with it a full measure of enjoyment and happiness, for the healthy, sensible woman.

If you are not in perfect health, our advice to you is to begin to take Cardui at once. It is a safe, vegetable medicine, which nutrises health to the female organs and system, by regulating irregular functions, and vitalizing the worn-out nerves. It will make you well.

Cardui relieves periodical pain, pulls up falling womb, and builds up health-vitality. Over a thousand women a month testify to its curative powers. Are they all mistaken?

Try Cardui today. All druggists sell it in $1.00 bottles, with full directions for use.

For special directions for your case, write us a letter, in strictest confidence, stating age and frankly describing all your troubles. We will send valuable advice, in plain, sealed envelope, free. Address: Ladies' Advisory Dept., The Chattanooga Medicine Co., Chattanooga, Tenn.

One of the advertisements of Wine of Cardui which were characterized by what Samuel Hopkins Adams described as "loathsome and gratuitous indecency."

The second reason for the publication of "An explanation," was that the matter might be put up squarely to the membership of the Methodist Episcopal Church, which has not only highly honored Mr. Patten but has also accepted from Mr. Patten, money derived from the sale of a vicious and fraudulent "patent medicine." Its readers know that THE JOURNAL is not in the habit of avoiding libel suits when such suits come as a result of its policy of exposing frauds in medicine. In the present instance, however, there were good reasons for believing that should Mr. Patten be given the slightest apparent justification for bringing an action against THE JOURNAL, prominent officials of the Methodist Episcopal Church would have taken refuge behind this suit as an excuse for not taking any definite action on Mr. Patten's status in the church. Soon after THE JOURNAL's first article appeared, a correspondent wrote us in this connection as follows:

"I am informed that the owner of this Wine of Cardui has brought suit against THE JOURNAL or the editor, I am not sure which, and that, pending the settlement of the suit no action is to be taken on his willingness to withdraw from the several important positions in the Methodist Episcopal Church."

1. "Tipple: To drink or sip, as alcoholic beverages, frequently or habitually, but not to the point of inebriation."—Standard Dictionary.

Nor was this all. When the Methodist ministers met in Chicago a few weeks ago, the papers stated that one of their number offered a resolution demanding that John A. Patten resign from his position as chairman of the book committee. The newspaper continued:

"Action on the resolution was prevented by the Rev. Dr. John Thompson, district superintendent of the Chicago Western district. He said that Mr. Patten has instituted a suit against the publication for $250,000 damages and asked that no action be taken until the suit has been decided."

THE JOURNAL'S experience with actions for libel brought by proprietary manufacturers forces it to question whether such suits are ever brought in good faith. When a certain fraud was exposed by THE JOURNAL a few years ago, suit was entered against the American Medical Association for the

A specimen of the Wine of Cardui advertisement appearing in November, 1905.

article. For three or four years the matter dragged in the courts, never coming to trial, and was finally thrown out. In the same way another suit, started five years ago, is still hanging in the courts and has never been brought to trial. Doubtless the same tactics would have been pursued had the Chattanooga Medicine Company been given an opportunity to bring suit against THE JOURNAL for the article on Wine of Cardui. The bringing of the suit would have been heralded widely, and the public would have been led to believe that Mr. Patten was a much maligned man. From every standpoint, therefore, it seemed inadvisable to give the slightest justification for opportunity of befogging what is a very definite issue. So much for the explanation of "An Explanation."

HAS WINE OF CARDUI AN EMETIC PRINCIPLE

Now, to revert to the points put forward in the protest of Mr. Patten's company regarding the possible misuse of Wine of Cardui. The stuff contains 20 per cent. alcohol; this is admitted. So far as we have been able to discover by repeated careful analyses, Wine of Cardui contains no other drug having any therapeutic effect present in sufficient quantities to prevent the use of this stuff for its alcoholic effect. Since THE JOURNAL'S original article appeared, tests have been made to determine this point.

SOME EXPERIMENTS

The dose of Wine of Cardui, according to the label, is one tablespoonful—half an ounce—to be taken three or four times a day. Each tablespoonful contains forty-eight drops of pure alcohol or the equivalent of about one hundred drops of whiskey. THE GIRL OR WOMAN WHO TAKES FOUR TABLESPOONFULS OF THIS NOSTRUM DAILY GETS THE SAME AMOUNT OF ALCOHOL THAT SHE WOULD OBTAIN IF SHE TOOK FOUR HUNDRED DROPS OF WHISKEY, OR, TO PUT IT ANOTHER WAY, THE SAME AMOUNT OF ALCOHOL THAT SHE WOULD GET FROM ONE-QUARTER OF A PINT OF CHAMPAGNE, OR ABOUT TWO-THIRDS OF A BOTTLE OF BEER. And this, bear in mind, is the dose recommended. It was stated that larger doses cannot be taken for two reasons: First, because the taste is alleged to be such as to prevent it, and second, because in larger doses it is alleged to act as an emetic. Here, then, are two definite assertions that are capable of proof or disproof.

So far as the taste of Wine of Cardui is concerned, while mawkish and bitter, there is nothing about it to prevent the use of the stuff either in larger or more frequent doses than that called for on the label. It is undoubtedly a fact that many persons who had never tasted ale or lager beer would declare these beverages just as unpleasant to the taste as "Wine of Cardui." It is probably true, too, that it is impossible to make preparations containing alcohol so unpleasant to the taste that they will not be misused by those who discover—innocently enough, perhaps—the exhilarating effects of the alcohol in such preparations. We may, therefore, dismiss at once the claim on the part of the manufacturers that the taste of Wine of Cardui will prevent its use in larger or more frequent doses than those recommended on the labels.

The question of an emetic principle presents a different problem. If there is such a principle in Wine of Cardui, then it should be possible to produce vomiting or at least nausea, by taking the preparation in doses larger than that called for. To test this point two and one-half ounces (five tablespoonfuls) of Wine of Cardui were taken and the alcohol removed by evaporation, leaving everything in the resulting product except the alcohol. This amount of material containing five times the regular dose of Wine of Cardui, was taken by each of three individuals to test its physiologic effect. No effect whatever was experienced! The experimenters might as well have taken so much water. To further test the point, three other persons each took five times the normal dose—that is, two and one-half ounces—of Wine of Cardui, alcohol and all. This is equivalent in alcohol-content, to about one ounce of whiskey and the persons who took these massive doses of the nostrum experienced no other effect than that to be expected from such an amount of whiskey. No vomiting or even nausea was experienced. So much for some of the experimental work that has been done to determine the question whether or not Wine of Cardui contains an emetic principle.

Another Wine of Cardui advertisement. This appeared in April, 1910, some years after the "present managers" of Wine of Cardui took control. The wonderful cure of Mrs. Lydia Powell, described in this advertisement, prompted us to get some facts on the case. We learn from a physician, living in the same town as Mrs. Powell, that she died in 1910!

EVIDENCE FROM THE FIELD

If Wine of Cardui can be used as a stimulant—in other words a "tipple"—then, in all human probability, it is so used. Shortly after the publication of THE JOURNAL'S brief note entitled "An Explanation," the following letter was received from a Tennessee physician.

> "*To the Editor:*—On page 1827 of THE JOURNAL for June 6, under the heading, 'An Explanation,' you refer in rather an apologetic manner to something that appeared April 11, concerning a nostrum much used in this country —'Wine of Cardui.'

"I did not read the issue of April 11, so I don't know how strong you made it, but it could not have been stronger than deserved. Sold in dollar bottles of sixteen doses, forty-eight minims of alcohol to the dose—enough to make any puny, nervous woman feel as good as a Scotch highball would the average man. Would go out of use at once if the medical properties it may contain were put up in a tablet or some other menstruum than dilute alcohol. Used sometimes by men a whole bottle at a time in this prohibition country, when short on more palatable 'booze.'

"For many years I have asked most all women I have treated for female diseases, if they had been benefited by using Wine of Cardui. About all had tried it more or less liberally. The answers were the same in substance: 'No, I can't say that it did. I thought I felt better when I first did, but as soon as I quit it, I could tell no difference.' Her husband and sons could say the same about their quart of sixteen-year-old Bourbon. Some women would say they could not take full doses, as it made their heads feel strange.

"No, Mr. Editor, you cannot hit too hard."

FURTHER TESTIMONY

This information made it seem worth while to write to physicians in Tennessee and the surrounding states asking for such light as they might be able to throw on the question. Here are excerpts from a few of the replies received:

From Sevier County, Tenn.—"I have known of cases in which Wine of Cardui was used in excess of the regular dose. I have seen men drink a half-bottle without taking bottle from mouth."

From Henderson County, Tenn.—"I saw a man who was drunk on it; he had drunk two and one-half bottles I was reliably informed."

From Scott County, Tenn.—"I have known a few women who seemed as though they could not get along without Cardui, and a few men to take it as a beverage."

From Walker County, Ga.—"I have known of two cases where Wine of Cardui was used in excessive doses and without complaint being made of nausea or other symptoms suggesting the presence of an emetic."

From Dickson County, Tenn.—"We have a great many supply stores through here and they all sell great quantities of the stuff [Wine of Cardui]. Two very large stores here, and one of the merchants told me four days ago that he sold as high as six bottles to one party at a time, so I judge from what he said they must be using it for its alcoholic effect."

From Smith County, Tenn.—"Some women here have been using it for a long time and think they could not live without it, who would think it awful to use common intoxicants."

From Chester County, Tenn.—"It is handed around by recommendation from one woman to another. I believe it is almost a public curse the way it is used."

From Colbert County, Ala.—"The druggist tells me there are fifty women, more or less, who buy regularly Wine of Cardui in excessive quantities. . . ."

From De Kalb County, Tenn.—"I once knew two men who bought Wine of Cardui and drank it as a beverage. At another time, some laboring men purchased several bottles at a country store, got drunk on it, one of them struck another on the head with a bottle, inflicting a severe scalp wound, necessitating my taking ten or twelve stitches to close the wound."

These represent merely some of the reports that come in from the districts in which Wine of Cardui has an extensive sale. They speak for themselves. As it has been said before, however, the alcohol-content of Wine of Cardui is but a minor indictment against the product; the basic objection to it is that the business has been built on deceit; that its sale is a wicked and vicious fraud perpetrated on ailing women.

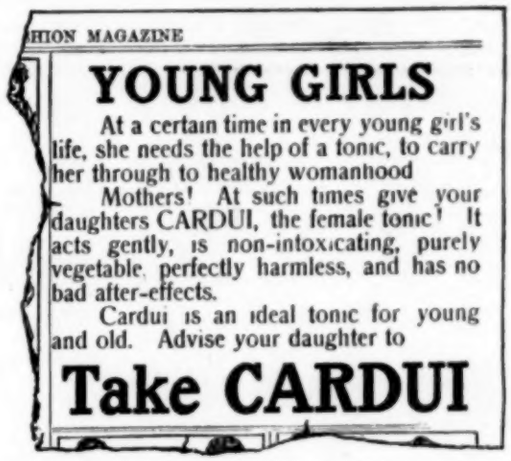
Before leaving the question of the composition of this nostrum, it is worth while to quote some paragraphs from a preliminary report on Wine of Cardui submitted by Dr. Henry Leffmann of the Department of Chemistry, Women's Medical College of Pennsylvannia:

"The preparation is in my opinion not a 'wine' either in the general or technical sense; it would be more correctly described as a 'tincture.' If the plant or plants from which this preparation purports to be named—to judge from its title—contain any principles of value along the line for which it is recommended, it would seem to be far better that they should be put on sale in the form of a concentrated extract which could be diluted with water as required. It seems wrong to sell a bottle containing one-fifth of its volume of alcohol for the sake of furnishing a few per cent. of bitter principles freely soluble in water alone. I recognize that it is stated that the alcohol is added to prevent spoiling but the necessary preservation could be reached in other ways.

"Considering all these points I am of the opinion that Wine of Cardui is a dangerous preparation as now manufactured and sold. Its inaccurate title may mislead persons into the belief that it is a preparation of real wine; its high percentage of alcohol may easily establish the alcohol habit without the consciousness of user until the condition has developed. Its nauseous taste and odor are not sufficient to prevent the development of a liking for it. The ease with which the tobacco and opium habits are established, although both are very nauseous drugs, show that under pressure of strong impulse a 'Wine of Cardui' habit may be established."

ARE THE CLAIMS EXTRAVAGANT?

Mr. Patten's concern also took exception to THE JOURNAL's criticisms of the advertised claims made for Wine of Cardui. The concern asserted—through Mr. Hough—that it is "their


HION MAGAZINE
YOUNG GIRLS
At a certain time in every young girl's life, she needs the help of a tonic, to carry her through to healthy womanhood
Mothers! At such times give your daughters CARDUI, the female tonic! It acts gently, is non-intoxicating, purely vegetable, perfectly harmless, and has no bad after-effects.
Cardui is an ideal tonic for young and old. Advise your daughter to
Take CARDUI

Here is another advertisement published in 1910 in which Wine of Cardui is recommended for young girls and is declared to be "non-intoxicating" and "perfectly harmless." Both of these falsehoods were eliminated from the labels and cartons of Wine of Cardui when the Food and Drugs Act went into effect. Had they been retained the Chattanooga Medicine Company would have subjected itself to prosecution. In newspaper advertisements and circulars "patent medicine" venders can lie to their heart's content without fear of legal reprisal.

desire and intention" to avoid claims for Wine of Cardui "that might reasonably or generally be objected to as extravagant." Either this "desire and intention" has been born since the publication of THE JOURNAL's first article on Wine of Cardui, or, Mr. Patten has a curious conception of what constitutes extravagance of statement. The criticisms in THE JOURNAL's first article on Wine of Cardui were directed against the recent advertising. The older advertisements were merely referred to as a matter of historical interest. In every instance THE JOURNAL made plain whether old or recent advertising was being referred to.

SOME RECENT CLAIMS

It is in the company's *recent* advertising that women are urged to take Cardui for "hanging breasts"; to take this alcoholic nostrum for gonorrheal infection of the vulva; to take Wine of Cardui for anteflexion, retroflexion, prolapse and inversion of the uterus; to take Wine of Cardui for suppressed menstruation and for "flooding"; to take Wine of Cardui for inflammation of the uterus, for inflammation of the ovaries and for inflammation of the fallopian tubes! It

is the *recent* advertising that contains the villainous suggestion that "every girl should take Cardui at the time of puberty." Is it the *recent* advertising that tells the bride that "all newly married women should take Cardui." It is the *recent* advertising that plays on the fears of the expectant mother, and assures her that Wine of Cardui "will assist in making childbirth easier." It is the *recent* advertising that tells the lying-in woman that "Cardui should be taken two or three times a day." It is the *recent* advertising that tells the woman at the menopause "Cardui should be taken regularly on the first sign of the coming change and its use continued through the entire period." It is the *recent* advertising that tells the same woman that at this time "cancer is also greatly feared by many women" and plays on and capitalizes her fears thus:

"There is no doubt that the womb, at this time, is less able to withstand disease, and if a patient is attacked, she is not unlikely to succumb to a local disease like cancer. But cancer is really a very rare disease, and other diseases, under proper treatment with Cardui, as a general tonic, will eventually disappear, so that, after the change has occurred, you will probably feel better than ever before."

All of these claims are in the *recent* advertising! And by the *recent* is meant that which was being sent out at the time of the appearance of THE JOURNAL'S article a few weeks ago. Yet the Chattanooga Medicine Company piously pleads that its present desire "is to avoid . . . claims that might reasonably or generally be objected to as extravagant."

It is not necessary at this time to discuss the other preparations put out by the Chattanooga Medicine Company such as "Thedford's Black-Draught," a so-called "vegetable liver powder"; the vaginal douche preparation, "Cardoseptic"—formerly called "Cardui Wash"—nor the line of fountain syringes that the company sells as an accessory to its "injection" medicine.

SUMMARY

To summarize:

1. Wine of Cardui is a vicious fraud.

2. Each dose contains as much alcohol as is found in about 100 drops of whisky and, so far as careful chemical and physiologic experiments show, does not possess any other drugs in sufficient quantities to give any appreciable therapeutic effect.

3. The principal owner of the business is John A. Patten, who is probably the most influential layman in the Methodist Episcopal Church.

4. While the Methodist Episcopal Church accepts Mr. Patten's money, the official publications of the church will not, so far as we have learned, accept the advertisements of Wine of Cardui.

5. The claims made on the package were so false that, when the Food and Drugs Act went into effect, it became necessary to modify them.

6. The claims made in recent advertising sent out by the Chattanooga Medicine Company, but not subject to the supervision of the Food and Drugs Act, were still false, fraudulent and vicious.

7. Mr. Patten, and his company, resented the inference that Wine of Cardui might be used as a "tipple," and submitted their protest through an attorney whose activities in behalf of the liquor interests, have been notorious.

In closing, THE JOURNAL wishes to emphasize the fact that nothing that has been said about John A. Patten is actuated by malice. THE JOURNAL believes that the business in which Mr. Patten is engaged is a public menace; it believes that the exploitation of Wine of Cardui is vicious and fraudulent; it believes, further, that as a matter of duty, the public should be apprised of these facts. Guilt in such instances is personal. As an editorial writer in *Collier's* recently said, referring in this instance not to a "patent medicine" maker, but to a whisky manufacturer:

"The law may better conditions in some respects, but whether it is bad 'booze' or poisonous patent medicines that are dispensed, the only way really to accomplish anything is to bring shame into partnership with the man who makes money out of it."

Correspondence

Surgical Charges

To the Editor:—There is no fixed rule governing the charge for surgical operations; but it is an accepted principle that it should depend on three factors, namely:

1. The social and financial standing of the patient.
2. The gravity of the operation, and sometimes its result.
3. The experience and skill of the surgeon.

There is a general rule, however, often adopted by the best operators of broad ethical ideas, that the maximum charge for a major operation should be about one month's gross income of the patient; that is, if the person for whom the service is performed has a salary of $12,000 a year, or an income from business, after paying actual expenses of the business, of a similar amount, the fee should be about $1,000. This does not take into consideration the patient's living-expenses. There are, however, many considerations that may reduce the charge and a very few that might reasonably allow of making it more. Good and fair-dealing surgeons, considering the three factors already mentioned, always endeavor "to do as they would be done by," and never to be oppressive in their charges.

It is better that an understanding be arrived at about the charge beforehand, the patient having given the surgeon a frank statement of his financial condition; but the foregoing principles should govern.

There are unfortunately some persons (black sheep) in the profession whose policy is to get all they can in every case, a "beg, borrow or steal" policy that is not countenanced by any right-minded physician. I. F. E.

[COMMENT.—The foregoing communication is from a surgeon who, in an accompanying letter, says: "This was written because so many reports come to my knowledge of exorbitant charges, usually by persons who have no claim to special skill, and because these things are bad for both patient and surgeon, as well as for the profession as a whole." The determination of equitable fees for surgical services is an important and complicated question. It has been asserted that modern surgery has injected into medical and surgical practice a spirit of commercialism not in harmony with the traditions of the profession. Not only the charging of exorbitant fees, but also the performing of unnecessary operations has been alleged. Undoubtedly, isolated instances of both practices occur, but are such incidents common and if so, what is the remedy?—ED.]

PLANTAR WARTS

To the Editor:—About fifteen years ago I suffered for several months with this painful affliction. At the suggestion of a colleague, I applied directly to the warts a 5 per cent. aqueous solution of chromic acid, application being made every second day with a toothpick or match-end. A very few applications effected a permanent cure, the warts being destroyed, leaving deep pits which soon closed in. There has been no recurrence. In the only case which I have observed since then cure was promptly obtained by the same treatment. I do not know who originated this treatment, and cannot even recall who suggested it to me; it was some one on the staff of the Vanderbilt Clinic at that time. The results were most satisfactory. Probably a stronger solution could be used if necessary.

W. P. MILLSPAUGH, M.D., Los Angeles.

[COMMENT.—Chromic acid has long been used as an application to warts, the strength being greater than in this communication. A solution containing 100 grains to the ounce is recommended. The British Pharmacopeia has a solution of 25 per cent. strength. It is applied in a 5 per cent. solution to prevent perspiration of the feet and to harden the skin. It seems, therefore, that the solution recommended by Dr. Millspaugh is much too weak for application to warts.—ED.]

Pneumothorax Artificialis, an International Society

To the Editor:—In THE JOURNAL, July 4, 1914, p. 49, I noticed that Dr. H. Schwatt of Edgewater, Colo., proposes the formation of a pneumothorax association. The doctor and others may be interested to know that there exists already an international society of medical men interested in this therapeutic procedure; it is called "Pneumothorax Artificialis." The secretary and treasurer of the society is Prof. C. Saugman, Vejlefjord Sanatorium, Daugaard, Denmark. The annual dues are $1. To each member is sent semi-annually a list of all members with their addresses. The publication known as *Revista delle Publicazione sul Pneumothorace Terapeutica,* which is edited by Professor Forlanini, is sent gratuitously to every member. In it are reviewed all publications on artificial pneumothorax. The reviewer of the American publications is Dr. M. F. Sloan of the Hospital for Consumptives of Maryland. Any one wishing to join the association may write me or, if he choses, communicate directly with Dr. C. Saugman.

S. A. KNOPF, M.D., 16 West Ninety-Fifth Street, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOUDREAU'S IODIN TREATMENT OF TUBERCULOSIS

To the Editor:—1. Where can I find reliable information about Dr. Boudreau's (of Bordeaux) iodin treatment of tuberculosis?

2. Is it true that 120, 200, 300 even 400 drops of tincture of iodin (French Pharmacopeia) may be given internally without any injury to the patient?

ANDREAS KLÖVSTAD, M.D., Chicago.

ANSWER.—1. We find no reference to the treatment by Boudreau except in the *Journal de médecine de Bordeaux,* 1914, lxxxv, 116, which was abstracted in THE JOURNAL, Feb. 14, 1914, p. 577.

2. These doses are excessive. We have no evidence that they can be tolerated by ordinary patients except the statement of Boudreau which is cited in the abstract.

HECHT'S MODIFICATION OF WASSERMANN REACTION

To the Editor:—Please publish the technic of the Hecht-Weinberg reaction which I understand is used as a control for the Wassermann test.

W. S. PUGH, M.D., Washington, D. C.

ANSWER.—The modification of the Wassermann reaction by Hecht is performed as follows: Alcoholic extract of heart is used. Each serum is tested in four tubes.

Tube 1 contains 0.02 c.c. serum and 0.08 c.c. salt solution.

Tube 2 contains 0.02 c.c. serum and 0.08 c.c. 1:50 dilution heart-extract.

Tube 3 contains 0.02 c.c. serum and 0.08 c.c. 1:100 dilution heart-extract.

Tube 4 contains 0.02. c.c. serum and 0.38 c.c. 1:200 dilution heart-extract.

The tubes are put into the incubator for half an hour, or into a water-bath raised to the temperature of 38 C. (100.4 F.) for five or ten minutes. At the end of this period such an amount of a 5 or 10 per cent. emulsion of sheep-cells is added that the fluid in each tube contains 1 per cent. red blood-corpuscles. It is important to avoid the addition of an excess of sheep's blood.

Tube 1 must show complete hemolysis in five or six minutes. In the test of a strongly acting serum all the other tubes show no hemolysis, while a weakly acting serum shows lysis in all but Tube 2.

For recent work on this see Gradwohl's article, p. 240.

Reference may be made to the following article:

Hecht, H.: Eine Vereinfachung der Komplimentbindungsreaktion bei Syphilis, *Wien. klin. Wchnschr.,* 1909, xxii, 265.

SPANISH MEDICAL JOURNALS AND MANUALS

To the Editor:—I wish to subscribe for a medical journal published in Spanish. There are several listed in the Index of THE JOURNAL, some published in Cuba, one in Mexico, and one in Spain. I have no way of judging of their relative value; in fact, I want the journal more for the purpose of gaining a familiarity with medical terms in Spanish than for any other purpose, and I would appreciate it if you could suggest a journal and inform me where to write to get it.

I have also written several book companies asking for a practice of medicine in Spanish but have not been able to learn of any. Should you know of such a volume, information as to where I can get it will be appreciated.

F. H. CRAIL, M.D., East Las Vegas, N. Mex.

ANSWER.—The following are some representative medical journals published in Spanish:

Boletin de la Asociacion Medica of Porto Rico. Box 1306. San Juan, Porto Rico. Monthly. About $2.

Revista Clinica de Madrid, Ferraz 82, Madrid, Spain, semimonthly, 23 francs (about $4.60).

Revista de Medicina y Cirugia, Consulado 60, Havana, Cuba, semimonthly, $4.50.

Semana Medica, Junin 843, Buenos Aires, Argentina, weekly, $5.

Siglo Medico, Magdalena 34, Madrid, Spain, weekly, $4.

Cronica Medica, Apartado 629, Lima, Peru, semimonthly, $3.

A new Manual de Medicina Interna is in press at Madrid to which the different chapters have been contributed by various Spanish specialists. It is under the editorial supervision of Drs. T. Hernando and G. Marañon. The publishers are Imprenta y Libreria Casa Vidal, Atocha 98, Madrid, Spain. The price has not yet been announced.

Prof. José Penna's course of lectures on infectious diseases is published by the press of *Semana Medica,* Junin 843, Buenos Aires, Argentina. Price about $2.50.

UNIT OF ANTITOXIN STRENGTH

To the Editor:—A unit of diphtheria is defined as that quantity which is capable of neutralizing 100 units of toxin, and a unit of toxin is designated as that quantity expressed in fractions of a cubic centimeter which is just sufficient to kill a guinea-pig weighing 250 gm., in the course of four or five days. Is this the unit employed by the manufacturers of diphtheria antitoxin when it was first put on the market? Is the same unit used now to denote the strength of the antitoxin as found in the shops at present?

At a recent meeting of the Daviess County Medical Society it was charged by some of the older members that the antitoxin used by them in their early experiences was four or five times the strength of that at present marketed by the so-called standard houses, as is shown by the results obtained in the treatment of diphtheria. Can it be possible that this remedy on which the lives of thousands depend has, like many other articles, been monopolized and commercialized so as to yield the largest possible profit to the dealers?

GEORGE W. WILLEFORD, M.D., Washington, Ind.

ANSWER.—Originally the unit of antitoxic strength was determined according to the method of Behring and was defined as ten times the least quantity of antitoxin serum that will protect a standard (300-gm.) guinea-pig against ten times the least certainly fatal dose of toxic bouillon. This method was unsatisfactory on account of variations in the toxic bouillon which were pointed out by Ehrlich, who showed that this toxin does not possess uniform combining affinity for the antitoxin. Ehrlich therefore devised a method by which a standard powder containing the toxin was produced.

In testing the antitoxic serum, the amount is determined which will protect a 250-gm. guinea-pig against 100 times a fatal dose of the toxin. The quantity of antitoxic serum that preserves life beyond the fourth day is itself the unit. To test the serum itself, guinea-pigs weighing exactly 250 gm. are given toxic bouillon, 0.1 c.c., plus varying quantities of the serum—1/200, 1/300, 1/400 c.c., etc. All five except those receiving less than 1/400 c.c., which die on or about the fourth day. The serum can then be assumed to have 400 units per cubic centimeter unless it is desired to test more closely.

At present the Hygienic Laboratory of the United States Public Health Service has legal control of the manufacture of therapeutic serums and kindred products in the United States, issuing licenses to those engaged in legitimate manufacture and furnishing a standard test serum similar to that of Ehrlich, to those entitled to receive it. The antitoxic strength of diphtheria antitoxin sold in the United States must be determined according to this standard test serum. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the Public Health Service. Inspection of the laboratories is repeated at least once a year, and if insanitary conditions are found, or if the products are not what they are asserted to be, the license is suspended.

It will thus be seen that the immunity unit for diphtheria antitoxin is fixed by law, and there is every reason to believe that all the diphtheria antitoxin furnished by licensed manufacturers conforms in strength to the requirements established by the United States government.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

THE SOCIALIZATION OF MEDICINE

James P. Warbasse, M.D.
NEW YORK

Society demands a special class who shall study the problems of human health and to whom it may look for advice and help in these vital matters. It is aware that the possibilities for good inherent in the application of this special knowledge are very great. The conquest of disease is now recognized as one of the wonderful chapters in human history. This medical knowledge has been won through the sufferings of countless generations of men and women and children. Students of science, long since passed away, have contributed to it. The ancestors of all of us have died to give it to us. It is natural to think of it as social knowledge—the heritage of all—to be denied to none—its benefits to be accessible freely to the descendants of men, all of whom, in due time, must contribute their quota to it.

Turning from the consideration of these larger aspects of medicine and health, and looking on the activities of that class in the community which is possessed of the special knowledge concerning the human organism and the disease which it suffers, we encounter a social anachronism. The medical sciences have made great progress, especially in the last half century, and their power for good in the prevention and treatment of disease is incalculable; still the average individual, well or sick, receives but little of their benefits when the possibilities of what he might receive are considered.

Our modern social system compels the average doctor to be a business man, competing with his fellows for a livelihood. He must make so much money each year to support his family. This must be his primary concern. The more sickness there is, the longer patients are sick, the more operations he can do, just so much better does he seem to prosper in a commercialized society. The practitioner who is most skilful in the methods of the tradesman, who commercializes his manners as well as his knowledge, is apt to have the largest practice and be publicly acclaimed as the most successful; while it is well known, at least to the medical profession, that the doctor who has the most knowledge and the best preparation and ability for his work often languishes for patronage because he does not bring to bear on the public mind the spell which skilful advertising methods insure.

To the commercial character of the practice of medicine is added the distressing fact that the ability of clients to pay the doctor is very poor. The people cannot afford to employ the doctor to do the best he can for them. In the average case, he cannot afford the time that would be required to give his best thought and attention to diagnosis and treatment. In his rounds he meets case after case which calls for serious consideration. Careful inquiry into its history, the scientific methods of the laboratory, personal supervision of the details of treatment, might all be used to the incalculable advantage of the patient. Science may have much to offer. But neither the patient nor the doctor can afford, from a business point of view, to consider these things. A short-cut expedient to often must be adopted; the gambler's chance, that most ills are self-healing, is taken; and the doctor is off to the next case in his quest for a livelihood.

This is the pathos of medicine. Its possibilities are not realized. One of the saddest things I see in medical work is the young man with alert mind, who has been well trained to enter practice—fresh from college, laboratory and hospital—with the vision of life before him—enthusiastic with his knowledge of the possibilities for helpful human service in his profession; and then to witness this young man, thrown into the maelstrom of competition, with the necessity of commercializing the sacred art of conserving human life, degenerate into a humdrum thing of pills and potions, joining clubs or a church as an economic enterprise, and rushing hither and thither in a motor-car in a community which measures success largely by the standards of business.

We do not know whether the economic condition of the average physician is worse or better than it was fifty years ago. We have no figures. But we do know that a large proportion of the medical profession is finding it difficult to make a living. We do know that the relative number of physicians is growing less, especially in communities in which more, and not fewer, are needed. We do know that the dividing of fees, the performing of abortions, cheap and unscientific contract practice, and the resort to quackery are the expedients to which many a capable man of high-minded preferences is driven, against his will, as a matter of economic necessity.

Do we desire that these evil conditions, springing from the competitive system, should be carried into the future? Is the time not coming for the more rapid socialization of the agencies for the promotion of public health? Other public necessities are undergoing this change. The people in progressive communities no longer leave to commercial enterprise such matters as the supplying of water for the people, the disposal of sewage, the cleaning of the streets, the education of the children, the carrying of mails, and the extinguishing of fires; and every year sees forward-looking communities add to the things that are taken out of the profit-making class and administered directly for the specific purpose which gives them their value.

The modern and inevitable trend is in the direction of removing the physician and sanitarian from the field of private and competitive business, and bringing them closer to the needs of the people. In Europe, this is being effected by the government and by the agency of sickness and insurance societies. Socialized medical attention is being rapidly brought to the people. The towns in France are beginning to apply direct action; municipal councils have passed ordinances providing that any resident of the town may consult any licensed physician without charge. The municipality pays the doctor. The national insurance act in England is the most sweeping piece of legislation in the direction of the socialization of medicine that the world has seen. Besides medical attention, the act provides insurance against sickness and disability for all who have an income below a certain amount. At present, 14,000,000 in England are subject to this law. It is intended that in the near future the act shall be made to apply to the dependents of the insured persons, so that the service shall embrace four-fifths of the population of England.

In the United States, as in the European countries, there is an increasing demand for trained sanitarians. It is notable that even the smaller municipalities and counties in rural districts are appointing full-time health officers. The schools, the courts, insurance acts, the industries and many of the municipal departments are making official places for the physician and sanitarian. The modern trend is illustrated by the city of Detroit, which in 1901 had in its health department, twenty-four employees; it now has about 200 employees. Ten years ago it had milk inspectors; now it has dairy inspectors. The health commissioner has announced that meat inspection cannot be made effective until the city owns its own slaughter-house.

It is evident that two agencies are at work for the socialization of the forces making for the public health. One is the state, acting in response to the political demands of the people; the other is private enterprise on the part of groups of individuals, forming themselves into cooperative societies. The latter is the syndicalist principle.

Science and expert ability have so much to offer in serious diseases that their treatment can no longer be conducted by a single individual. Team-work is necessary. There are blood examinations, urinalysis, Roentgen-ray examinations, bacteriologic examinations and many other tests and methods

requiring expert knowledge. This is best secured in the hospital. The rich can afford to have it brought to them. The poor secure it not at all or only in some of the better municipal hospitals. Middle-class people cannot afford this team-work either at their homes or in the hospital, and accordingly suffer for want of the best that science can offer.

It has long been recognized that contagious diseases are the concern of all the people, and they have been so treated. This is because of the possibilities of their spreading from the sick to the well. Society is now much concerned about mental diseases. It has taken cognizance of the insane because of their irresponsibility; and now, because of their relation to the problems of eugenics, it is concerned for all with transmissible mental defects.

In response to the same psychology, all other diseases are becoming matters of public concern, because, even though they may not spread from sick individuals, still they have their origin in food, housing, occupations or other conditions which are matters of public concern. Because of the closeness of our human relations and interdependability on one another, any condition which society harbors, which is capable of producing disease, is coming to be recognized as the concern of all. Therefore if society is concerned that it may suffer from contagious disease in an individual, it must also be concerned that it may suffer from disease in a cow, disorder in a railroad or steamboat, or defective sanitation in a mill or mine. "Injury to one is injury to all," is coming to have an ethical as well as economic significance.

As the manifold public activities, demanding physicians and sanitarians, increase, the proportion of physicians, engaged in competitive private practice, decreases.

The education of men and women for this work is now ready to pass into the hands of the people. Medical education in this country has gone through the first stage, that of private commercial enterprise, and is now well advanced in the second stage, that of regulation and control by the state. The third is that in which it becomes wholly a public function. Already we have many public medical schools in which the people are educating their own physicians.

This great question of the public health, we should bear in mind, is by no means a medical question. In its administration are needed, not only the physician, but also the sanitarian, nurse, chemist, engineer, statistician and social executive.

As I look into the future, I see communities divided into districts, each with a sanitarian responsible for its health. Each district should have not only a social center but also a sanitary center. Here should be a laboratory for diagnosis, equipped with all the appliances and facilities of modern science, with trained experts in every department. In connection with it should be a central hospital. An outpatient and an inpatient department should supplement one another. This should be a community center in which the problems of the prevention of disease should be worked out. Prevention should be the key-note of the sanitary and medical work, and should supplant the old idea of making treatment the aim of medical effort.

According to the needs of the people, specialists in all branches should be located at convenient intervals in dispensaries and hospitals. There should be a hospital in every community—country as well as town. The number of hospitals should be regulated by the population and geography. A single tuberculosis dispensary should be provided to cover a certain number of sanitary districts. Here the people should be taught how to prevent tuberculosis; and the tuberculous should receive advice and help. In England, the new insurance act provides a tuberculosis dispensary for every 150,000 inhabitants. It provides 200 sanitariums with accommodations at the rate of one bed for every 5,000 of population.

A Roentgen-ray equipment should be located in every community. Such special institutions should be complete; and, being as perfect as science could make them, they should prove more effective than the multitude of little inadequate equipments scattered about a city as we now find them. A similar plan with reference to surgical operations and other special work would naturally be most effective. A corps of surgeon, with central equipment, for a given population should be provided.

The people should have a wide range of choice in the selection of physicians. No physician should be called on to serve more than a certain number of patients, for the physician as well as the patient has rights to be respected. The special line of work into which a physician enters should be determined by his aptitude. Vocational selection should be employed. These public servants should receive compensation commensurate with their services and their needs, insurance and pensions, relieving them utterly from the fear of poverty.

What advantages may we expect from this inevitable socialization of the agencies making for public health? In the first place they will be accompanied by the socialization of other public necessities. It is all a part of one big human movement. Things are to be done *because they need to be done,* and not for the purpose of making money, with the human value of the work as a by-product. The primary function of the doctor will be to prevent disease and to relieve suffering. It will not be, as it now is, to make money by preventing disease and relieving suffering—so far as is consistent with making money, just as the primary function of the railroad industry will be to carry passengers and commodities safely and expeditiously. It will not be, as it now is, to make dividends and interest on stocks and bonds by carrying passengers and commodities—as safely and as expeditiously as is consistent with making dividends and interest on stocks and bonds. These two motives—the old and the new, the one addressed to property and the other addressed to human life—are utterly and incomparably different.

At the same time the free administration of justice, as well as of health agencies, should become a reality. Under such a régime the expert medical witness should be the agent of the people. His function should be to give impartial information. He should be in the service of all the people in the interest of truth and justice, just as the judge should be; and securing justice should not be a matter of barter and price any more than should the securing of medical help.

Among the important functions now undertaken by the people in but a desultory way are the inspection of sources of water-supply, the analysis of water, the economic and sanitary disposal of sewage and garbage, the regulation of buildings from a sanitary point of view, the sanitary control of schools, offices, public buildings, factories, bakeries and mines, and the protection of the health workers in the various trades. When the workers alone are the employers and owners of the industries, we may be sure that these things will receive better attention.

The same may be said of the food- and drug-supply. These may be expected to become socialized along with other agencies which have to do with health. The analysis and study of these things, and then their public control, must be a part of the same movement. Water, one of our most important foods, is now procured to the people as a public function; milk and bread must follow the course of the water, as surely as the day follows the night.

Under these ideal, or, I prefer to say, normal conditions, competition would be stimulated. There would be competition among the health officers to keep down morbidity in their respective districts, and to show the best results in treatment. There would be wholesome competition among physicians to attain to excellence in their work; for that would be the object toward which they might strive unhampered if the dollar were eliminated from the struggle. Experience shows this to be the case. The best results are being secured to-day where scientific men are carrying on their work unhampered by economic competition.

Individual initiative would be stimulated. In this era of money making, the public mind has fallen into the habit of judging success by the dollar standard. To take the agencies of health out of this category would place them where they might operate unrestrained by the pursuit of profits. It is a

noteworthy fact that the great discoveries in science, the discoveries that have contributed the most to human life, have not been inspired by the reward of money. Moreover, most so-called discoveries represent but the accumulated knowledge of many generations, and belong to no man or set of men. They are a common heritage, and it is highly presumptive for any individual to add a final touch to an age-long chain of knowledge, and then lay personal claim to the whole. All the knowledge of the medical sciences is common knowledge—not to be denied to the humblest who needs it.

With such agencies as these at work, human life could be made sweeter. In the place of our commercialized organization, we should have a more equable and humane distribution of health forces. It is calculated by insurance actuaries that in the United States there are 600,000 deaths and in England 300,000 deaths annually, which are entirely preventable, and which could be prevented if the object of our medical effort were the saving of life.

Among the working people the infant mortality is horribly high because the babies of the working people cannot be provided with the attentions and the environment necessary to save their lives. These babies are just as precious as the babies of the rich. Tuberculosis and most other human ills have an economic significance. Among the wealthy there now is a surfeit of doctors; among the poor, too few. In Pennsylvania there are 100,000 births annually in rural places, with no hospital near, and very few, poorly prepared, underpaid and overworked doctors. I believe that the wives of coal-miners and iron-workers are as worthy of the best scientific attention and the tenderest care in the hours of their need as are the wives of the rich. I believe that they should have it, not as a charity or welfare enterprise, but as a matter of social justice. It is their right.

I am aware that this view is contrary to the conventional mortality of present-day society, which, with hypocrisy in its heart, prays for it one day in the week, but which votes against it, acts against it, and adjusts its affairs against it at all times. The workers, who create the wealth, some day will demand at least this for their women, unless the people as a whole anticipate it and do it for them.

Soldiers and policemen receive gratuitous medical attention. Is it not reasonable to ask, Is not the farm-worker as important as they? What of all those who perform useful service? And what of the women who, in the shadow of death, replenish the supply of worn-out workers—who feed the mills and mines their human grist? Are these not performing necessary public service?

Keeping people well is the most important employment for the medical profession. Society is going to demand the talents of the physician to this end. It is for this that society should bestow its rewards.

The socialization of medicine is coming. The time now is here for the medical profession to acknowledge that it is tired of the eternal struggle for advantage over one's neighbor. The value of cooperation in science is proved. Medical practice withholds itself from the field of science so long as it continues a competitive business. Its full possibilities will be realized only when its whole effort is expended in the conservation of human health and life.

Therapeutic Utilization of Anaphylactic Shock.—One of the features of anaphylaxis is that the blood seems to become thicker, and Dufour and Crow deliberately induced anaphylaxis recently in an effort to arrest severe hemorrhagic purpura following the first menstruation. The uterus and gums had bled almost constantly for thirteen days. The girl had been treated with antitoxin during diphtheria at 18 months, and now besides the ordinary measures, small amounts of antitoxin were injected and after each injection the blood coagulated in much less time than before and the hemorrhages were arrested. In their communication (*Bull. de la Soc. des Hôp.*, 1914, xxx, 979). Dufour and Crow say that it might be possible to induce passive anaphylaxis for the purpose, injecting first the serum of an animal in a state of anaphylaxis and then the "unchaining" dose of the antitoxin.

Medical Education and State Boards of Registration

Minnesota April Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral and written examination held at Minneapolis, April 7-9, 1914. The number of subjects examined in was 11; total number of questions, 100; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1913)	85
Northwestern University	(1913)	87
Rush Medical College	(1913)	79
University and Bellevue Hospital Medical College	(1913)	87
Milwaukee Medical College	(1908)	76

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University	(1896) Wisconsin; (1905)	Wisconsin
Rush Medical College	(1905) Illinois; (1912)	Illinois
University of Illinois	(1912)	Illinois
Marquette University	(1913) Wisconsin; (1913)	Wisconsin; (1913) Wisconsin.

Colorado April Report

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, April 7, 1914. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. Fourteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1912)	81.9, 83.3
Northwestern University	(1913)	88.9
Rush Medical College	(1913)	88.6
Starling-Ohio Medical College	(1913)	88.1
Royal College of Physicians and Surgeons, Ireland	(1913)	84.8

FAILED

Non-graduate	52.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
California Eclectic Medical College	(1904)	California
College of Physicians and Surgeons, Chicago	(1908)	Wisconsin
Rush Medical College	(1877)	Illinois
Indiana University	(1910)	Indiana
Hospital College of Medicine, Louisville	(1906)	Kentucky
Eclectic Medical University, Kansas City	(1900)	Missouri
Kansas City Medical College	(1886)	Missouri
Marion-Sims College of Medicine	(1899)	Missouri
St. Louis College of Physicians and Surgeons	(1908)	Tennessee
John A. Creighton Medical College	(1913)	Nebraska
New York University, Med. College	(1889)	Ohio
Hahnemann Medical Coll. and Hosp., Philadelphia	(1907)	Ohio
University of Nashville	(1903)	Tennessee
Medical College of Virginia	(1904)	Virginia

ANATOMY

1. Describe the lower half of the humerus. 2. Describe the knee-joint. 3. Give complete anatomy of the pectoralis major and minor muscles. 4. State how the abdomen is divided superficially into regions. Name the regions so formed. 5. Give the course and branches of the axillary artery. 6. Describe carefully the parotid gland and its duct. 7. Give a full description of the duodenum. 8. Give anatomy and surgical anatomy of the crural canal. 9. Describe the prostate gland. 10. Give the extracranial course and distribution of the vagus (tenth cranial nerve).

PHYSIOLOGY

1. Discuss the physiology of respiration. 2. Describe the salivary glands (*a*) as to their histologic structure, (*b*) their secretion, (*c*) their innervation, and (*d*) the influence of their secretion on normal digestion. 3. Trace a morsel of proteid food through the process of its digestion and elimination. 4. Describe the physiologic action of the cardiac nerves. 5. What physical factors are concerned in the production of blood-pressure and blood velocity? 6. Define dialysis and osmosis in the body; give example. 7. Name three organs of secretion and two of excretion. Mention the physiologic constituents of the product of each organ named. 8. Describe the structure and function

of the spinal cord. 9. Name the organs of special sense, and describe in detail the physiology of one. 10. Mention four factors essential to impregnation.

CHEMISTRY

1. What is chemical affinity? 2. What are the laws of definite and multiple proportions? 3. Define valence. 4. What is atomic weight and how determined? 5. What are the properties of bases? 6. Define salts, acid salts, basic salts and double salts. 7. Complete the chemical equation $Na_2SO_3+CaCl_2=$? 8. Give physical and chemical properties of oxygen. 9. What is the difference between a mixture and a chemical compound? 10. Give some examples of univalent, bivalent, trivalent and quadrivalent elements.

PATHOLOGY

1. Give the pathology of hemorrhage of the brain. 2. Name the tumors of the mammary gland. 3. Give the pathology of tabes dorsalis. 4. Explain the pathology of angina pectoris. 5. Give the pathology associated with jaundice. 6. Give the morbid anatomy associated with fluid in the abdominal cavity. 7. Explain sarcoma, carcinoma, endothelioma, epithelioma, embolism, thrombosis. 8. Give the pathology associated with hemorrhage from the urinary tract. 9. Explain pathology of suppurative arthritis. 10. Give the pathology of typhoid fever.

SYMPTOMATOLOGY

1. State your plan of percussing the chest, and give the results of percussion of the chest in a normal case. 2. Describe bronchial, vesicular and bronchovesicular breathing and tell where each is normally found. 3. Tell how the spleen is examined and the possible significance of its enlargement. 4. Give the normal location of the apex-beat of the heart and the causes of its displacement. 5. Discuss the pathologic variations in character of the apex-beat. 6. Describe and give the significance of murmurs arising from the mitral valve. 7. What are the symptoms of leukemia? How is it to be distinguished from pseudoleukemia or Hodgkin's disease? 8. What are the causes and symptoms of exophthalmic goiter? 9. Give the causes and symptoms of chronic interstitial nephritis. 10. Give the symptoms, diagnosis, prognosis and complications of diabetes mellitus.

TOXICOLOGY

1. What are the symptoms of acetanilid poisoning? 2. Give treatment of same. 3. What poisons produce neuritis? 4. Give symptoms of chronic lead-poisoning. 5. Give symptoms of one poisoned by morphin. 6. Give treatment. 7. Give post-mortem appearance. 8. Give symptoms of one poisoned with phosphorus. 9. Give treatment of one poisoned with phosphorus. 10. Give post-mortem appearance.

SURGERY

1. (*a*) Describe the usual course of metastasis following carcinoma of the breast. (*b*) Describe the lymphatic drainage of the lower lip, and explain its surgical significance. 2. Describe the usual deformity accompanying fracture of the neck of the femur. 3. Give the causes and symptoms of coxa vara. 4. Describe the usual resultant deformity in untreated cases of Pott's fracture. 5. What are the dangers accompanying excision of a goiter? 6. Give the treatment of a simple oblique fracture of the femoral shaft. 7. What are the effects of removal of the spleen? 8. What are the symptoms of traumatic rupture of the kidney? 9. Name some of the more important localizing symptoms which may accompany fracture of the vault of the skull. 10. Give the differential diagnosis between acute appendicitis and acute cholecystitis.

OBSTETRICS

1. Discuss your treatment of a case of normal labor. 2. What instructions would you give to a primipara (normal) who comes in the third month of pregnancy to engage your services? 3. Discuss the causes and treatment of post-partum hemorrhage. 4. Discuss the pathogenesis of puerperal infection caused by the streptococcus group of organisms. 5. Discuss the care of the breasts during pregnancy and during the puerperium. 6. Classify the indications for low forceps. 7. Give four normal diameters of the pelvic inlet. 8. Discuss the early diagnosis of eclampsia and briefly outline the treatment. 9. What will you carry in your obstetric bag? 10. Name the pathologic conditions that may result from puerperal sepsis.

Book Notices

INFLUENZA: ITS HISTORY, NATURE, CAUSE AND TREATMENT. By Arthur F. Hopkirk, M.D. Cloth. Price, $1.25. Pp. 209. New York: Charles Scribner's Sons, 1914.

This is not, as might be supposed, a careful medical monograph on influenza; indeed, the author expressly disclaims the purpose of writing an exhaustive work on the subject. He does not state to what class of readers his book is addressed. The treatment seems slightly technical for ordinary laymen, whereas the directions and glossary seem to be intended for nurses. Almost half of the volume is occupied with historical matter. The etiology of the disease is regarded as settled, being attributed without hesitancy, in spite of the insufficiency of the evidence, to the *Bacillus influenzae*. In the discussion of the prevention and treatment of the disease, evidence that the book is intended for the lay public becomes obvious and the idea persists that certain proprietary foods and nostrums are being favored with a write-up. Along with a goodly amount of such advice as is common to books on personal hygiene and a modicum of purely medical advice there are numerous directions for the use of nostrums. The prevention of influenza is dismissed with the recommendation to take a daily dose of quinin and suck Formamint lozenges when actually exposed to the danger of infection. Antiphlogistine is the author's standard application for inflammation and pain. Malto-Yerbine he uses for cough, and Regulin is recommended as a cathartic. This to be sure, seems a limited list, but in the diet rules the restriction becomes marked. The proprietary foods recommended may be said to have a cosmopolitan reputation, although it is rare that writers of books insist on them with such persistency as Hopkirk. Not even the noted European clinicians who have exploited cottage cheese and glycerophosphates in original articles have equaled the following: "Breakfast, which should be taken at about 8:30 a. m., is one of the meals at which Sanatogen must always be administered," and so on for eight pages. Carnine-Lèfrancq, and Benger's food are occasionally mentioned, but always, except once, the author returns to his first love and insists on the fraudulently exploited Sanatogen. Foreign physicians, especially British, may find such a book tolerable and perhaps instructive, but for Americans the ordinary text-books will probably furnish an equal quantity of useful information without induction of nausea by the persistent recommendation of nostrums. The astonishing thing is that Scribner's would allow their imprint on such a book.

SCROFULOSIS. By Prof. Dr. G. Cornet. Translated from the Second German Edition by J. E. Bullock, M.D., Assistant Medical Officer, Eversfield Chest Hospital, St. Leonards-on-Sea. Cloth. Price, $5 net. Pp. 515. New York: William Wood & Co., 1914.

The idea may be somewhat startling that a book of five hundred pages should be devoted to the discussion of a condition to which at most a page or so is given in our text-books. The meaning of the terms "lymphatism" and "exudative diathesis" which replace in modern thought the old idea of scrofula are discussed at great length, but the final conclusion is that accepted by most authors that scrofula is merely external tuberculosis. The author rejects the view that has been recently gaining ground that tuberculosis infection is predominantly frequent in childhood and that adult tuberculosis is a mere revivification of an infection latent since childhood. The book forms a valuable treatise on the local and external tuberculosis of childhood.

TROPICAL MEDICINE AND HYGIENE. By C. W. Daniels, M.B., F.R.C.P., Lecturer on Tropical Diseases, London Hospital. Second Edition. In Three Parts—Part 1: Diseases Due to Protozoa. Cloth. Price, $3 net. Pp. 277, with 73 illustrations. New York: William Wood & Co., 1913.

This work is divided into parts corresponding with the classification of the micro-organism causing the disease. The present volume includes diseases caused by protozoa. In the preface the author states that this arrangement has been justified. About half the volume is devoted to malaria and blackwater fever. The connection of the latter disease with malaria is not established and its etiology is unknown. The other diseases considered in this volume are yellow fever, African relapsing fever, kala-azar, yaws and some minor affections. An appendix gives some valuable data in the form of dates, measurements, etc. The book is well illustrated and forms a handy manual on these important diseases.

ANATOMY AND PHYSIOLOGY. A Text-Book for Nurses. By John Forsyth Little, M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. Cloth. Price, $1.75 net. Pp. 483, with 153 illustrations. Philadelphia: Lea & Febiger, 1914.

In this work there is, of course, nothing original, but it is an excellent compilation of the most important facts in anatomy and physiology necessary to nurses. The illustrations are taken chiefly from well-known text-books. A very good glossary completes the book.

Medicolegal

Statements Made to and by Attending Surgeons Employed by Railroad Company

(Chicago & Erie Railroad Co. vs. Shenkel (Ind.), 104 N. E. R. 50)

The Appellate Court of Indiana, Division No. 1, says that, in this personal injury case, brought by Shenkel, the railroad company offered in evidence a statement identified as signed by the plaintiff and certified by his attending surgeons, who were employees of the company. The statement related to the time, place and manner in which the injury was received. Objection was made on the ground that it was shown that the statement which was taken by the attending physician in the sick-room was a confidential communication under the statute, and that the offer was an attempt to prove by indirection what could not be proved directly. The objection was rightly sustained. The excluded statement was not only a "communication to" the attending physicians "in the course of their professional business," but also a statement of the physicians themselves. After the plaintiff's signature the instruction contained the following: "If operation was performed, did the injured person consent? Ans. None at this writing. Give date of operation, names of operating surgeons, witnesses to operation. Ans. None at this writing." Then followed the certificate and signatures of the "attending physicians." This was clearly an attempt to get before the jury by this indirect method a confidential communication of the plaintiff, and also the statement of the physicians made at the same time and under the same circumstances. Statements made to or by physicians employed by a railroad company while attending the injured party shortly after his injury should be closely scrutinized because of the situation and condition of the injured party and the natural bias and influence of physicians so situated. When, as in this case, it clearly appears that the physicians were rendering the patient medical and surgical attention when the communication was made, and that he was depending on them for such services, and also that the instrument is a statement of both patient and physicians, made under like circumstances, some latitude must necessarily be given the trial court in determining whether the evidence offered does or does not come within the prohibition of the statute as to privileged communications. The offered evidence in this case was so clearly within the spirit and meaning of the statute that to admit it on the ground that it was only a signed statement of the plaintiff made out of court, tending to contradict his testimony, would be a surrender to technical form in violation of the spirit, if not of the letter, of the statute.

Privilege Extends to Physician Invited to Assist in Diagnosing Case

(Mutual Life Insurance Company of New York vs. Owen (Ark.), 164 S. W. R. 720)

The Supreme Court of Arkansas says that a Dr. Brown invited a guest of his named Dr. Smith to go with him to see his patients, and that Dr. Smith accompanied him and was present when he examined and prescribed for the insured in this case. It was true that Dr. Smith did not visit the insured for the purpose of personally treating him, but to examine the patient as a physician, at the request of Dr. Brown, to assist him in diagnosing the case. It was the intention of Dr. Brown to use any knowledge that he might acquire of the patient's condition as the result of the joint examination by himself and Dr. Smith. Hence it might be said that Dr. Smith went, not only as a matter of courtesy to Dr. Brown, but also for the purpose of assisting him in diagnosing the disease and treating the patient. This clearly brought him within the spirit of the statute and prohibited him from disclosing any knowledge of the patient's condition thus acquired, without the consent of the insured's representatives in this suit.

Society Proceedings

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Twenty-Second Annual Meeting, held at New Haven, May 20 and 21, 1914

(Concluded from page 191)

Subacute Hyperthyroidism

DR. J. M. FLINT, New Haven: A woman, aged 38, had a perfectly typical clinical picture of subacute hyperthyroidism in exophthalmic goiter. The onset commenced last fall, without any factor with which she can make association. She began to get nervous; her eyes began to be a trifle prominent, and the swelling in the neck appeared. The physical examination showed few ocular symptoms. There was no mononucleosis, which is usually associated with the more serious cases. This patient has a relatively small goiter; the right lobe is chiefly involved. It is soft, and has no palpable thrill; but there is a very distinct bruit heard on both sides. We do the simple operation in the toxic cases; that is, ligation of the superior thyroids on one or both sides. There is no evidence here of thymus persistence, which is one of the interesting chapters in the recent discussion of exophthalmic goiter.

Fractures of the Clavicle

DR. W. E. HARTSHORN, New Haven: We had quite a problem presented to us in the treatment of fractures of the clavicle at the dispensary. We found that with the ordinary plaster dressings, it was impossible to reduce the deformity. We did employ the ordinary Sayre dressing. At the end of the second week, in the treatment of these cases, or of the third in adults, the arm was restricted, and the forearm placed in a sling. Sayre's dressing is not very satisfactory, because it is extremely uncomfortable for the patient, and with enough strain put on the adhesive bands really to secure reduction, the dressing is so tight that the patient cannot wear it. We next attempted to obtain adjustment by means of the Collins method; but the same problem was offered as before, and the method did not stand up well. We then adopted the Bellamy dressing. It is better than the others, but was also very uncomfortable to wear. Last, we tried the Peckham dressing, and it works very well in children. It reduces the deformity, is comfortable to wear, and can be put on over the clothing.

Apparatus for Aspiration and Irrigation of Joints

DR. J. W. CHURCHMAN, New Haven, Conn.: The apparatus which we use consists of a series of tubes which connect, through common openings, with the tube inserted into the joint and with the tube leading from the pump, which can provide a force or suction power. The apparatus can be taken apart and cleaned, and can be autoclaved just as it stands. It is necessary to get the joint clean, the walls of which are lined and covered with little chunks of fibrin that must first be washed clean. We collect the pus for purposes of culture, forcing it into a bottle. When the joint is clean we fill the bottle with what we want to use, and then force that into the joint. After the joint is full of the irrigating fluid, we draw it back again, and we may even repeat that operation with another fluid. I have used this method in two cases of arthritis and the results have been very satisfactory; in fact the second patient was completely cured.

Influence of Gentian Violet on Tissue-Cultures

DR. J. W. CHURCHMAN, New Haven: We have found that a marked bactericidal action is possessed by gentian violet dye. Gram-positive organisms were killed by it. It cannot be injected into the body, because if it is injected into the ear of a rabbit in doses sufficient to kill the germs, the animal changes the stain within two hours and renders it harmless to the organisms. That fact, however, may turn out to be of value, because if the stain can be made to reach the organisms and stay unchanged long enough to kill them, and the body

will then change the stain and get rid of it, we shall have a very valuable antiseptic. We have some cultures of tissues growing in gentian violet, absolutely unimpaired.

Stitch Ulcers After Gastro-Enterostomy

DR. J. M. FLINT, New Haven: The end-results of our investigations make us believe that stitch ulcers of the jejunum following gastro-enterostomy are due either to sloughing out of the stitch or to changes in the circulation that the stitch has produced.

Case of Facial Hemiatrophy

DR. MAX MAILHOUSE, New Haven: My patient at the age of 18 had some discolored spots (from ½ to 2 inches in diameter), and gradually atrophy set in, with some twitching of the muscles and some pain in them; the atrophy involved skin, subcutaneous cellular tissue, muscles and bone. His family history is entirely negative, and there is nothing specific in the case. There is no beard growing on the right side of the face, but there is a beard on the left side. The patient's mouth has been drawn to the right; he can move his jaw to the left, but not to the right. There is marked atrophy of the right side of the tongue and also of the soft palate, but the patient has no difficulty in swallowing. His right hand is much larger than his left.

Non-Protein Nitrogen in Urea

DR. WILDER TILESTON, New Haven: A number of ingenious methods have been devised for the accurate estimation of various substances in the blood. Among the most important are: the methods for the estimation of cholesterin in the blood; the estimation of sugar in diabetes; the estimation of uric acid, and lastly, the estimation of the non-protein nitrogen in the urea. I shall deal largely with the last-named. In health, the method has but little effect, the chief interest centering around nephritis and other kidney diseases. We have examined a considerable number of such cases. A uremic case showed the effect of diet on the total nitrogen. There were 56 mg. of non-protein nitrogen. After a few days of low-protein diet, it sank to 24 mg. In nephritis we have found all figures, from normal to ten times the normal. In no case of uremia which showed high figures did the patient live more than a few weeks. This estimation also promises to be of value in hypertrophy of the prostate when operation is considered; but any patient showing as high as 75 mg. would be a doubtful case for operation. In all cases of lead-poisoning we found increased nitrogen—the lowest being 30 mg. This shows how injurious the influence of lead is on the kidneys. Acute intestinal obstruction was the only disease not of the kidney that showed a marked increase. Acute infectious diseases showed only a moderate increase. In syphilis we found a marked increase in about half the cases, indicating that the kidneys are more often affected than has hitherto been supposed. The value of this method from the point of view of diagnosis and prognosis is very apparent.

Pericarditis

DR. GEORGE BLUMER, New Haven: I will speak of some points that have come up in our experience with pericarditis, especially with effusion. This disease is often almost without pain. One patient with effusion came to the hospital complaining of pain, one made no complaint, and the other two complained of discomfort in the region of the heart. Pericarditis is often recognized only on the necropsy table, and is frequently found unexpectedly in routine examinations. We have had two or three cases in which the effusion was undoubtedly proved and in which the apex impulse did not disappear. The presence of pericardial friction sound does not rule out pericarditis with effusion. One is apt to mistake extensive effusion with consolidation, for pleurisy with effusion. In fact, the pericardium has been tapped by mistake for the pleura. The Roentgen ray is valuable, not only in diagnosis, but also as an indication of where to tap the patient. We had one case in which we tapped and the dulness persisted. Then we tapped the pleura, and found that there was pleurisy.

THE AMERICAN THERAPEUTIC SOCIETY

Fifteenth Annual Meeting, held at Albany, N. Y., May 29 and 30, 1914

The President, DR. HOWARD VAN RENSSLAER, Albany, in the Chair

Officers

The following officers were elected for the ensuing year: president, Dr. Francis M. Pottenger, Monrovia, Cal.; vice-presidents, Dr. Robert T. Morris, New York; Dr. Spencer L. Dawes, Albany; Dr. J. Madison Taylor, Philadelphia; secretary, Dr. Lewis H. Taylor, Washington, D. C. (reelected); treasurer, Dr. A. Ernest Gallant, New York. (reelected).

President's Address: A Study of the Therapeutic Effects of Thermopenetration in the Treatment of Phthisis Pulmonalis

DR. HOWARD VAN RENSSELAER, Albany, N. Y.: By theoretical reasoning it would seem that when there is an abnormal amount of blood in the lungs, tubercle bacilli are more readily destroyed, or at least prevented from multiplying as they do in the anemic condition of run-down persons. Theoretically also, what is needed is something which will directly heat up the lung as a whole, or any special part of it, without producing a general congestion over a large area of the body. The employment of the high-frequency current has given the best results of any special treatment we have ever tried. The patients were divided impartially into three classes for treatment: (1) those given the high-frequency current; (2) those given tuberculin, and (3) those given no special treatment, which we called the control cases. The benefits so far obtained from high-frequency current, in comparison with the other methods, are: (1) the ability to keep the patients longer in the hospital; (2) the greater increase in weight (five times greater), and the larger percentage of those who increased, and (3) apparent cure or arrest of 69 per cent. of the cases in the discharged patients, against 15.5 per cent. as the best of the other methods.

The Acquisition of Tuberculosis

DR. WILLIAM H. PORTER, New York: It is established, so far as bacteriologic research has advanced our knowledge, that tuberculosis is not, and cannot be, transmitted from the mother to the offspring *in utero*, and, consequently, the disease is never inherited. The most that can be inherited is a definite chemicophysiologic activity, and this likewise occurs much less frequently than is generally supposed. As the weeks and years advance, the nutritive vitality of the organism progressively deteriorates, local inflammations are excited, the proper soil is developed, finally the non-tuberculous system is successfully inoculated with tubercle bacilli, and the lesions characteristic of true tuberculosis are developed. These anatomic changes have never been found in the human organism until after the fourth week of extra-uterine life, and the frequency with which they are found increases yearly from 5 per cent. up to the fifteenth year, when the maximum of 30 per cent. is reached. While it is impossible to exterminate tuberculosis as completely as theory would indicate might be possible, it is still within the range of probability to prevent the development of hundreds of thousands of cases every year. Its accomplishment, however, is to be effected along the line of the prevention of a soil suitable to the growth of the tubercle bacilli, rather than by overstrenuous efforts to prevent inoculation.

Volatile Substances Isolated from Tubercle Bacilli Cultures, and Their Effects on Experimental Tuberculosis

DR. ERNEST ZUEBLIN, Baltimore: I have made a series of experiments on guinea-pigs from which it may be concluded that in tubercle bacilli there is contained a volatile substance of a lipoid nature chemically which possesses a much more strongly penetrating odor than the original bacilli culture. In literature we find a few reports of acute intoxication resulting from the emulsification or evaporation intoxication

of tubercle bacilli cultures. According to my interpretation, underlying the manifestations noted there is not a simple intoxication, but combined with it there is probably a hypersensitiveness, since the symptoms appear to be more pronounced in individuals giving a marked tuberculin reaction.

DISCUSSION

Dr. Francis M. Pottenger, Monrovia, Cal.: In a tuberculin the protein or the lipoid element may predominate, and the same is true of the antibodies against the two groups. I cannot accept the position of Dr. Porter that tuberculosis is never transmitted to the offspring *in utero*; I believe that in certain instances such transmission does occur. In advanced cases of the disease tubercle bacilli are constantly escaping into the blood; it would therefore seem easy for them to pass through the placenta. It is a fact, however, that in the great majority of instances the infection is contracted after birth.

The Tuberculosis Home Hospital Experiment

Dr. P. Brynberg Porter, New York: In the "East River Homes," built by philanthropic persons and placed at the disposal of the New York association for Improving the Condition of the Poor, twenty-seven families, seventy-nine members of which were tuberculous, lived in sanitary homes, had ample sunshine, fresh air, good and abundant nourishment, freedom from undue work and worry, reasonable segregation, skilful medical attendance, and constant nursing supervision. The results observed in the tuberculous patients compare very favorably with those at the best sanatoriums, while the expense was less than that of institutional treatment. No new cases of the disease developed in any of the families. At the time of admission the average income of the six families which were discharged as rehabilitated was only $6.42 a week, while when they were discharged their average income amounted to $15 a week.

DISCUSSION

Dr. Linsly R. Williams, Albany, N. Y.: It seemed to the projectors of the East River Homes that if some combination for the benefit of the whole family could be worked out, it would be a great gain. The question of the complete control of the tuberculous patient was the marked characteristic of the experiment, and one important point was to see that he was not overworked. Altogether, this is a very hopeful scheme, and one which I think might be adopted with advantage by other cities.

Digitalis in Chronic Diseases of the Heart: the Advisability of Its Continuous Administration

Dr. Louis F. Bishop, New York: Fibrillation of the auricle and very serious valvular disease are the conditions most often benefited by the use of digitalis over periods of months and years. The amount required is largely a matter of experiment. In auricular fibrillation it is a good rule to keep the pulse about 90, while in valvular disease it is well to keep the tonicity of the heart-muscle at such a point as to insure a minimum amount of shortness of breath. A third type of disease in which the continuous use of digitalis is often indicated is presented by the later stage of arteriosclerosis; when there is a tendency for the high blood-pressure to change to a pressure falling below the line of compensation. The use of so powerful an agent requires constant supervision, and every heart-patient should be seen at least once a month. There are many persons whose lives depend on this continuous use of digitalis, and the drug may eventually bring about a true strengthening of the heart. There is no such condition as a digitalis habit.

DISCUSSION

Dr. A. D. Blackader, Montreal: I prefer to give digitalis in courses, and this plan is combined with rest—at least partial rest—of the heart. Any one employing digitalis is to a certain extent using a two-edged sword. He should therefore have a clear idea of the action and of the side-effects of the drug.

Dr. T. E. Satterthwaite, New York: In cardiac deficiency digitalis is our sheet-anchor. Whether or not its administration is to be continued uninterruptedly must depend on the conditions present. By employing digitalis we avoid the disagreeable gastric effects of the crude drug, and for years I have relied almost exclusively on this, only occasionally giving a little strophanthus and nitroglycerin.

Dr. R. D. Rudolf, Toronto: Mackenzie is accustomed to wait for the breaking down of compensation before resorting to the use of digitalis, but I think it is a much better plan to begin the digitalis as soon as possible after the discovery of evidences of threatened decompensation. In this way the more serious condition may often be averted.

Some Problems in Genetics

Dr. Thomas E. Satterthwaite, New York: While human eugenics is still imperfectly understood, there are certain principles bearing on the transmission of traits by propagation which are tolerably well established. These principles should be popularized, so that the adult portion of society will realize the importance of fit and the dangers of unfit matings. With an aroused public appreciation of these matters, appropriate legislation would sooner or later follow, and be made effective. Uniform laws as to the regulation of marriage, as well as laws to prevent the transmission of diseases by diseased persons, should be urged in every state. Legislators should advocate only such laws as will accomplish satisfactory results without an unreasonable curtailment of personal liberty. There is urgent need of further researches in the field of eugenics, in order to clear up misapprehensions and so allay criticism as to its civic value; but, as this work would necessarily involve the services of special medical experts, the expenditure of large sums of money, and unusual facilities, it should be relegated to the states or the general government, which could provide the men, money and opportunities and accomplish the most at the least expense. Reports from such sources would serve admirably for the bases for the framing of appropriate laws, or for the amendment of those which have proved unsatisfactory.

DISCUSSION

Dr. Edward D. Fisher, New York: I question the correctness of the mendelian theory, and we do not know enough to pass intelligently on many of the legal measures which have been proposed; while if such laws were enacted it would not be possible to carry them out as would be desired. We could not get sterilization applied in New York. Practically, it would be very difficult to decide who should and who should not be sterilized. In this question of genetics there will always be two parties, the believers in heredity and the believers in environment.

Dr. C. E. Woodruff, New York: I believe that environment, not heredity, is the principal element to be considered. If the criminal had been subjected to good influences, he would have been an orderly member of society. I have an idea that it is the "good" families which are sending the most persons to prison. As to the sterilization of those who are known to be liable to transmit imbecility, etc., I am convinced that it is a social necessity.

Dr. R. W. Wilcox, New York: There is one class of persons, the feeble-minded, which has not been fairly treated. It is rightly held that these unfortunates ought to receive the same care as the insane and the imbecile; yet it is a fact that in New York State only 4,000 out of the 19,000 in the state, are now under custodial care.

Diagnosis and Treatment of Disease of the Cecum

Dr. G. Reese Satterlee, New York: Many cases of dilated residual cecum and intestinal stasis give symptoms resembling ulcer or adhesions of the duodenum, ulcer of the stomach, pyloric stenosis and gall stones. Pain from lesions in the region of the cecum is often referred to the stomach, and vice versa. This close relationship is illustrated by the frequency of stasis in the stomach with dilated residual cecum, without any gastric, duodenal or gall-bladder disease. Careful investigation will often show the typical

signs of cecal disease, a ballooned, tender cecum with thickened walls, and evidences of intestinal stasis. A thorough roentgenoscopy is necessary in every case. Roentgenograms with bismuth injection of the colon should be employed to prove apparent lesions in the cecum or colon. Constant tenderness over a large area to the left, with persistent constipation, indicates cecal disease, rather than appendicitis, which is usually characterized by distinct attacks of pain, nausea and vomiting. The medical treatment of the ptosed, dilated and sluggish cecum consists in the use of abdominal supports, elevation of the foot of the bed, and massage and vibration, with diet and hygiene and occasional colonic irrigations and castor oil. Russian mineral oil, taken regularly, has given excellent results. The free drinking of water is encouraged, and milk fermented by lactic acid bacilli is a valuable aid. Autogenous colon vaccines will relieve the autotoxemia and sometimes move the bowels. Among surgical procedures which may be used is suspension of the transverse colon, which elevates the cecum. In conditions apparently leading to obstruction, short-circuiting, colostomy or even ileostomy or colectomy may be indicated. Plication of the cecum, with suspension of the cecum and, when indicated, of the sigmoid, has been successfully employed. Diverticula and malignant or tuberculous growth should, of course, be removed.

The Medical Treatment of Intestinal Stasis

DR. R. W. WILCOX, New York: From the point of view of the physician the causes of this condition, which can be remedied, against which he must direct his efforts, resolve themselves into four categories: (1) insufficient peristaltic action of the intestinal wall; (2) errors in diet; (3) dryness of the intestinal contents resulting from deficient secretion of the intestinal fluids, especially bile, and (4) weakness of the abdominal muscles due to overstretching from various causes. Partial stenosis of the bowel caused from within or without by the pressure of displaced organs, abdominal effusions and peritoneal bands or adhesions interfering with the normal passage of fecal matter belong, undoubtedly, to the surgeon.

DISCUSSION

DR. O. T. OSBORNE, New Haven, Conn.: Among the students at Yale I see an increasingly large number of patients suffering from the early stages of appendicitis or of inflammation in the region of the appendix. I have wondered whether these cases were due to athletics or to conditions incident to the students' being obliged to be in chapel every morning at 8:10. Their hasty breakfasts usually consist largely of oatmeal, eaten with sugar and cream or milk, and they have no time to go to stool afterward. Chronic constipation develops, and this, no doubt, is the cause of the attacks which I have observed.

DR. E. ZUEBLIN, Baltimore: In chronic constipation, simple medical treatment is often not sufficient, and I have found that vaccines may be of great service.

DR. W. W. BABCOCK, Philadelphia: It is a fact that many of these cases which cannot be relieved by mechanical support, internal treatment, etc., may be favorably affected by vaccines. There are cases of old colon affections in which recovery occurs when treatment with antityphoid vaccine is given.

DR. C. E. WOODRUFF, New York: Dr. Satterlee's paper has shown the admirable results accomplished by vaccines. At the same time, we should bear in mind that they may do much harm. During the past two years my attention has been drawn to quite a number of cases of tuberculosis and other serious disease following antityphoid vaccination. At the same time I would not discourage the judicious use of vaccines, for the good results from them are sometimes wonderful.

DR. G. R. SATTERLEE, New York: I believe that Lane is right in attributing ulcer and cancer largely to intestinal stasis, and that if we could eliminate intestinal conditions we would have a much smaller number of these affections to deal with. These stasis cases may be divided into two classes: those with enteroptosis and those without, and the Roentgen ray is a very valuable aid to diagnosis.

DR. A. E. GALLANT, New York: If a person uses bran regularly as an article of diet, he will not have any trouble from Lane's kink. For the best results it is necessary to employ an absolutely pure brand, one sterilized by a temperature sufficiently high to destroy any fungi.

DR. T. F. REILLY, New York: There is a bread to be had which is composed largely of flaxseed and crushed cereals and which has the same effect as bran.

DR. L. F. BISHOP, New York: It seems to me that in all the discussions on intestinal stasis I have heard too much stress laid on the mechanical factors; as though the intestinal tract were an inanimate tube. The intestine, by its peristaltic action, passes over the material in the tube, and what we are dealing with in this condition is often not so much a physical obstruction as a matter of mobility.

DR. R. T. MORRIS, New York: These patients are mostly neurotics. I have cured an extremely severe case of asthma by means of short-circuiting.

The Use of Horse-Serum for the Prevention of Hemorrhage in Nose and Throat Operations

DR. C. F. THIESEN, Albany: The serum was used before operating, when it was expected that there would be an unusual loss of blood. The injections were given when, from a history of cases of severe hemorrhage in the patient's family, or of severe spontaneous hemorrhage in the patient himself, such a result was to be anticipated. In the eight cases of my series the average coagulation time before injection of the serum was 5.18 minutes, and after injection, 4.12 minutes, making an average decrease in coagulation time of 1.06 minutes. The much talked-of danger of anaphylaxis is practically nil when, as in my cases, only one injection of serum has to be made.

DISCUSSION

DR. O. T. OSBORNE, New Haven, Conn.: Before using diphtheria antitoxin we should try to find out whether or not the patient is susceptible to horse emanations and the like.

DR. R. D. RUDOLF, Toronto: I have tried a great many agents for controlling hemorrhage, and I believe that Nature's coagulation is brought about more effectively by Nature's hemorrhage than by anything else. During the past winter I have had two cases illustrating this. One was of thoracic aneurysm, and the other of abdominal aneurysm, and in the latter instance the patient was bled three times for the control of successive hemorrhages.

The Action of Pituitary Extract on Acute Heart Failure and Uncompensated Heart Lesions

DR. E. ZUEBLIN, New York: Impressed by the marked physiologic action of pituitary extract on muscular fibers, striated and unstriated, and by the valuable results from it in obstetric and gynecologic practice, I undertook a clinical study, especially in cases in which, with a failing heart, immediate action became necessary. From my observation in a series of six cases it would seem (although two of them terminated fatally) that pituitary extract is applicable in desperate cases.

DISCUSSION

DR. R. D. RUDOLF, Toronto: I am convinced that pituitary extract and epinephrin exhaust the reserve power of the heart. In acute conditions there is plenty of reserve to draw on, but such is not the case in terminal conditions, and such agents may kill very promptly. Therefore, I believe that they should be used only in emergencies and when there is an abundance of reserve power.

DR. O. T. OSBORNE, New Haven, Conn.: I have used pituitary extract frequently in the past two years, and have found it a very valuable agent. I have never seen it do any harm.

Auricular Fibrillation: Its Diagnosis and Treatment

DR. WILLIAM KIRK, Troy, N. Y.: The question has been raised as to whether or not the ventricular

form of venous pulse can be recognized by the unaided senses. I believe that it can in the majority of instances. In early and compensated cases, however, the pulsation can rarely be recognized, and it is necessary to resort to the graphic method. The general practitioner, unfamiliar with the instruments of precision used in the graphic method, may recognize the presence of auricular fibrillation, ordinarily, from a persistent irregular pulse, the rate of which is at or above 120 (which will be almost positive evidence for the diagnosis), and the occurrence of a deficit between the rate of the apex and the radical pulse—a characteristic encountered in practically every untreated case. In the treatment the first consideration is the removal of the exciting cause, such as overwork or digestive trouble. Digitalis acts as a specific in a very large proportion of cases. The choice of a preparation is largely a matter of taste, provided that the one used is known to be effective. I have been accustomed to employ a standardized tincture or fluid extract, or the fresh infusion of the green leaves. When the pulse has been reduced to 60 or 70, and the apex-beat coincides with the radical pulse, it is wise to discontinue the digitalis for a time and then begin again with smaller doses, or else to continue with smaller doses.

DISCUSSION

Dr. G. R. Satterthwaite, New York: Auricular fibrillation is not an uncommon condition. I agree that generally it can be recognized. The graphic method shows it absolutely. This method has restored the sphygmograph to use, as it shows the difference between the cardiac and the radical pulse. As to the prognosis, the patient is kept in just the position in which the physician holds him. Patients are apt to get tired of the treatment. They intermit their medicine, and then they go off suddenly.

Dr. L. F. Bishop, New York: As regards polygraphic tracings, the curve has nothing to do with a mathematical curve; whatever its particular shape, it serves for diagnosis. It is simply a record of something which is taking place, and the essential part of it is the beginning of the up-stroke. Taking careful note of this, we may disregard the respiratory curve, the shape of the curve, and everything else.

Dr. W. R. Wilcox, New York: The preparation of digitalis which best shows the action of the drug, as originally described by Withering, is the infusion. The chemistry of digitalis is extremely obscure. I have made over 20,000 tracings with the sphygmograph. I have also made a special study of the six drugs of the digitalis group. There is in digitalis a substance which is centrally emetic, though its glucosids cause less gastric irritation than the infusion. A practitioner, I think, will obtain the best results from the preparation of digitalis about which he knows the most.

Dr. Stewart: In digitalis there are at least four glucosids, as well as some other principles concerning which at present we know nothing. I think that the glucosid digitalin ought to be standardized.

Dr. T. F. Reilly, New York: Sometimes digitalis seems to fail, and we have another drug, apocynum, which may then prove of service. The eclectics call it the "cardiac trocar." It is very irritative to the stomach, but does not act satisfactorily when given by the rectum.

Dr. W. Kirk, Troy, N. Y.: Ordinarily I have used the tincture and also the infusion of digitalis. As to the glucosids not causing gastric disturbance, it has been shown that some emetic effect must be produced by every preparation of digitalis representing its pharmacologic properties, by reason of the central action of the drug. I believe that the fat-free preparations will produce more or less gastric irritation on account of their central effects. I have employed apocynum with very good results when the patient has not had emesis.

Dr. R. W. Wilcox, New York: It certainly has been conclusively shown that digitalis and its preparations have a central emetic action. The amount of the gastric irritation caused is a matter of degree, and less nausea results from the free-fat preparations than from the others.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Philadelphia

April, XI, No. 4, pp. 541-735

1 Congenital Luxation of Hip. P. Le Damany, France.
2 Causes and Treatment of Scoliosis. Z. B. Adams, Boston.
3 Treatment of Scoliosis. A. Schanz, Dresden.
4 *Club-Foot. A. Ehrenfried, Boston.
5 *Pseudoarthrosis Produced by Interposing Sheet Silk and Bayberry Wax. R. O. Meisenbach, Buffalo.
6 Diagnosis of Traumatic Periostitis of Lumbosacral Spine. C. E. Coon, Syracuse, N. Y.
7 Spontaneous Luxation of Hip-Joint as Sequel of Typhoid. Report of Three Cases. C. M. Jacobs, Chicago.

4. **Club-Foot.**—Checking up cases Ehrenfried found that equinovarus occurs three times as often as all other types of club-foot. The next most common form is potential calcaneovalgus. Other types are rare. Males are affected two to three times as often as females; the percentage of males is higher in equinovarus than in other forms. More than half the cases are double; the percentage is lower in equinovarus than in the other forms. Of the single cases, more than half are right sided. Five per cent. of all cases show heredity; of these all are equinovarus, usually double. Club-foot occurs three times as often in twins as in single pregnancies. More than a third of all cases occur in first born; the percentage is lower in equinovarus than in the other forms. Labor is difficult in approximately one-fourth of all cases. Three per cent. are premature. Three per cent. are known to be illegitimate. Other congenital deformities occur in about one-fifth of all cases.

5. Abstracted in The Journal, June 7, p. 1817

American Journal of Physiology, Boston

June, XXXIV, No. 3, pp. 263-351

8 *Parathyroid Deficiency and Sympathetic Irritability. R. G. Hoskins and H. Wheelon, Chicago.
9 Content of Sugar in Blood under Common Laboratory Conditions. E. L. Scott, New York.
10 Effect of Calcium and Protein Fed Pregnant Swine on Size, Vigor, Bone, Coat and Condition of Offspring. J. M. Evvard, A. W. Dox and S. C. Guernsey, Iowa City, Ia.
11 *Influence of Epinephrin on Respiration. L. B. Nice, J. L. Rock, and R. O. Courtright, Oklahoma, Okla.
12 *Factors Affecting Coagulation Time of Blood. V. Effects of Hemorrhage Before and After Exclusion of Abdominal Circulation, Adrenals or Intestines. H. Gray and L. K. Lunt, Boston.

8. **Parathyroid Deficiency and Sympathetic Irritability.**—Hoskins and Wheelon found that parathyroid destruction in dogs results in a marked increase of vasomotor irritability as shown by the reactions to nicotin, epinephrin and pituitrin. All components of the vasomotor mechanism, sympathetic cells, myoneural junctions and musculature, seem to be affected. The effects are of varying degree in different cases. There was observed no strict parallelism between the external symptoms of parathyroid deficiency and the degree of vasomotor irritability. Inconclusive evidence indicates that calcium injections in some measure restore vasomotor irritability toward normal. The sympathetic system offers no exception to the general increase of irritability that results from parathyroid extirpation.

11. **Influence of Epinephrin on Respiration.**—The effect of epinephrin on respiration it was found occurs synchronously with that on the circulartory system. Doses of epinephrin which cause a fall in blood-pressure elicit an increase in the depth of respiration. This increase may or may not be preceded by a shallowness. Within limits, doses of epinephrin which produce a rise in blood-pressure cause an increase in the depth of respiration. This increase, again, may or may not be preceded by a shallowness. The increase is proportional to the rise in blood-pressure and to the amount of epinephrin given. Excessive doses produce a marked shallowness in breathing. Within limits, the shallowness is proportional to the effects on blood-pressure and to the amount of epinephrin given.

12. **Factors Affecting Coagulation Time of Blood.**—Gray and Lunt summarize their results as follows: Hemorrhage decreases clotting time, especially if moderately severe, 13 per cent. The most important coagulating factors may be localized in the abdomen, because: (1) exclusion of the abdominal circulation increases clotting time, and (2) hemorrhage after exclusion no longer stimulates a decrease of clotting time. The adrenal glands probably favor by their secretion rapid clotting after hemorrhage, but after adrenalectomy hemorrhage still decreases the clotting time. Exclusion of the intestines usually increases clotting time, but after this exclusion hemorrhage can still decrease the clotting time. The important rôle which the liver has been proved to play in coagulation indicates that it provides, perhaps in cooperation with the intestines and the adrenal glands, the necessary elements to hasten clotting after extensive bleeding.

Annals of Otology, Rhinology and Laryngology, St. Louis

March, XXIII, No. 1, pp. 1-272

13 Acute Thyroiditis as Complication of Acute Tonsillitis. C. F. Theisen, Albany, N. Y.
14 Diagnosis of Endocranial Complications of Suppurative Labyrinthitis. A. Braun and I. Friesner, New York.
15 Results of Seven Cases Operated on by Mr. Heath. E. M. Plummer, H. P. Mosher, Boston.
16 Bronchoscopic Treatment of Spasmodic Asthma. G. F. Keiper, Lafayette, Ind.
17 Vacuum Diseases of Maxillary Sinus. R. C. Lynch, New Orleans.
18 Indication for Labyrinth Operation, Report of Eight Operations and Six Cases in Which No Operation was Performed. C. F. Welty, San Francisco.
19 When Radical Mastoid Is Imperative. J. C. Sharp, New York.
20 New Esophagoscope. R. Lewisohn, New York.
21 Case of Cerebellar Abscess with Atypical Symptoms—Recovery. A. Dighton, Liverpool.
22 Bronchial Asthma and Relation of Nasal Conditions to It. W. J. Abbott, Cleveland.
23 Case of Recurring Laryngeal Polypi with Tetany, R. B. Canfield, Ann Arbor, Mich.
24 Adenocarcinoma of Nose: Chronologic Review and Case Report. L. D. Alexander, New York.
25 Semicircular Canals and Function of Equilibrium. G. E. Shambaugh, Chicago.
26 Syphilis of Ear. O. J. Stein, Chicago.
27 Esophagoscopy. S. A. Friedberg, Chicago.
28 Epipharynx in Children. E. M. Holmes, Boston.
29 Fistula Symptom in Non-Suppurative Diseases of Ear. O. Beck, Vienna.
30 Case of Probable Injury to Jugular Bulb Following Myringotomy in an Infant Ten Months Old. J. R. Page, New York.
31 Countercoup Fracture of Skull. T. R. Chambers, Jersey City.
32 Cancer of Larynx with Special Reference to Radium Therapy. J. C. Beck, Chicago.
33 Etiology of Nasal Hydrorrhea. Case Reports. H. Kahn, Chicago.

Archives of Internal Medicine, Chicago

June, XIII, No. 6, pp. 841-988

34 *Value of Hexamethylenamin as an Internal Antiseptic in Other Fluids of Body than Urine. F. Hinman, Baltimore.
35 *Hexamethylenamin. H. McGuigan and C. L. v. Hess, Chicago.
36 *Relations of Brain and of Olfactory Apparatus to Processes of Immunity. H. Sewall, Denver.
37 *Metabolism in Dementia Praecox. E. L. Ross, Hospital.
38 Titration of Wassermann Reagents. L. Thompson, Little Rock, Ark.
39 *Attempts to Produce Scarlatina in Monkeys. C. Krumwiede, Jr., M. Nicoll, Jr., and J. S. Pratt, New York.
40 *German Measles (Rubella); An Experimental Study. A. F. Hess, New York.
41 Differential Diagnosis of Intestinal Entamebas of Man. C. F. Craig, Fort Leavenworth, Kan.
42 Immediate Effect of Repeated Doses of Theobromin Sodium Salicylate and Theocin on Renal Function in Acute Experimental Nephritis. R. Fitz, Boston.
43 *Three Cases of Adams-Stokes Syndrome with Histologic Findings. A. Oppenheimer and B. S. Oppenheimer, New York.
44 *Intrameningeal Treatment of Tabes and Cerebrospinal Syphilis. T. R. Boggs and R. R. Snowden, Baltimore.
45 *Twenty-Three Cases of Pneumonia Treated with Antipneumococcus Serum. W. R. Williams, New York.

34. **Value of Hexamethylenamin as an Internal Antiseptic.**—Hexamethylenamin is dependent on the liberation of formaldehyd for its antiseptic value. It is not converted into formaldehyd in any of the normal alkaline fluids of the body; therefore, Hinmann claims it can be of no prophylactic value in any of these fluids. After some infections of these fluids there may be under certain conditions a change in reaction sufficient to produce slight liberation of formaldehyd, but it was not possible to show that there would be enough to give antisepsis. In localized infections of pronounced acidity, hexamethylenamin is not taken into them from the circulation in amounts to furnish formaldehyd in antiseptic strength (the gall-bladder, possibly, excepted). The therapeutic use of hexamethylenamin as an internal antiseptic is justified, experimentally, for urinary conditions alone, and then only when it is excreted into an acid urine.

35. **Hexamethylenamin.**—Since, after the administration of hexamethylenamin, free formaldehyd appears only in the gastric juice and acid urine, and not in other secretions or in the blood, even with dialyzing tests, the authors hold that the liberation results from the acid reaction only and not from cell action. Even if it were liberated in other locations it would probably exert no beneficial action because of its reconversion or rapid oxidation into injurious products. Combined formaldehyd as hexamethylenamin, does not decompose readily until an acid medium is reached, when the action is that of weak formaldehyd. The only apparent indication for the internal administration of the drug, therefore, is in infections of the urinary tract.

36. **Relations of Brain and Olfactory Apparatus to Immunity.**—Summarized, Sewall's conclusions are the following: Guinea-pigs sensitized to horse-serum may be desensitized by residence in a horse-stable. It is probable that this reaction may be rapidly achieved through the olfactory sense or more slowly by absorption through the respiratory mucous membrane. The period of antianaphylaxis is of less than two days' duration. The converse of this, sensitization of normal guinea-pigs in stable air, Sewall has not been able to achieve. Removal of part of the brain of a sensitized guinea-pig produces much more severe shock than the same amount of injury in a normal animal. This shock is apt to be followed by a period of antianaphylaxis of short duration. Section of the olfactory nerves within the cranial cavity preceding the brain operation by a day or more abolishes the tendency to shock. Such nerve section in the normal animal also seems to reduce the shock arising from definite brain injury. Depression of the olfactory sense may be produced through cocain and the symptoms of poisoning with this drug resemble those of anaphylaxis. The body as a whole may be sensitized through the peripheral application of horse-serum after a definite latent period. The time required to sensitize the peripheral epithelium has not been found to be materially altered by previous general sensitization. A normal animal sensitized by local treatment may resist large intravenous injections of serum repeated at intervals of two weeks. Sensitization of one area of the respiratory epithelium involves sensitization of the rest, though the local signs of expression are different. The evidence indicates that local anaphylaxis, induced through the periphery, precedes the development of general sensitization. Tuberculous guinea-pigs were made worse when treated by instillations or sprays of old tuberculin.

37. **Metabolism in Dementia Praecox.**—Five cases of dementia praecox, three of them in a chronic and two in subsiding acute phase of the disease, were used by Ross in the metabolism tests. Over a period of from four to eight days the exact income and outgo of total nitrogen, different forms of nitrogen, total sulphur, different forms of sulphur, phosphorus, calcium and magnesium were determined. The metabolism of total nitrogen was found to be within the limits of normal with the possible exception of one case. The urea nitrogen of the urine was variable but remained normal. The ammonia nitrogen of the urine varied within the limits found in normal cases. In the acute cases a tendency was exhibited to excrete more of this form of nitrogen than in the other class of patients.

The amounts of creatinin and uric acid nitrogen obained in these cases of dementia praecox coincide with the normal. The metabolism of total sulphur is considered normal, with the acute cases showing a greater sulphur excretion, both in urine and feces, than the other class of patients. The

total sulphate-sulphur output, according to the data on normal cases cited by authorities, was below normal. The inorganic sulphate-sulphur of the urine, according to data on normal subjects, was below normal in absolute quantities in both classes of patients, and lowest in the case of the acute class. The amounts of this form of sulphur expressed in percentage of the total urinary sulphur, were about normal for the chronic class but below normal for the acute group. The urinary neutral sulphur was practically normal for the chronic cases, but much above normal in the subsiding acute cases. The ethereal sulphate findings were negative.

As to the meaning of these positive findings on the sulphur metabolism there is little question in Ross' mind. In the chronic cases there was normal total sulphur, practically normal neutral sulphur, below normal total sulphate and possibly below normal inorganic sulphate. In the acute cases there is a normal, but a maximum normal, excretion of total sulphur, subnormal total sulphate, subnormal inorganic sulphate and supernormal neutral sulphur. Therefore it must be concluded from the sulphur data that in the acute cases the patients had lost to a certain degree their normal powers of oxidation. Also this is suggested in the patients in the chronic class by the subnormal sulphate output. The findings with regard to phosphorus, calcium and magnesium were negative.

39. **Attempts to Produce Scarlatina in Monkeys.**—The attempt to produce scarlet fever in monkeys and baboons by the faucial inoculation of streptococcus cultures or unfiltered exudates and discharges from scarlet-fever cases, as well as the intraperitoneal injections of filtrates of such exudates and discharges and of large quantities of blood, gave negative results.

40. **German Measles.**—Hess' investigation included a bacteriologic study of the blood, inoculations of blood into monkeys with the object of producing the disease, and a cellular examination of the blood during the period of incubation of the disease. In four instances the blood was obtained for bacteriologic examination. In three of the cases the rash had been present for less than twenty-four hours, and in the fourth for about thirty-six hours; in two the temperature of the child was above the average, between 102 and 103 F. Four *Macacus rhesus* monkeys were inoculated with blood obtained from four different cases. In no case did the rash develop. In only one instance was there a rise in temperature, following a considerable period of incubation. In the others there was no such rise.

Blood examination showed that in almost all cases there was a definite increase in the lymphocytes even preceding the appearance of the exanthem. It would seem to Hess that this premonitory lymphocytosis might be of value to institutions in heralding the fact that infection has taken place, and in facilitating the segregation of infected from non-infected children, and thus, perhaps, in limiting the spread of an epidemic. That there is a lymphocytosis at the time of the appearance of the rash may also serve to differentiate rubella from scarlet fever, a disease with which it is sometime confounded, but which is associated with an increase of polynuclear cells in its early stage.

43. **Adams-Stokes Syndrome.**—The hearts of three patients with Adams-Stokes syndrome examined by the Oppenheimers presented, the first a calcific mass in the region of the auriculoventricular bundle, the second no gross lesion across the conducting system to account for the symptoms, the third infarction of the ventricular septum. The first patient is reported to have denied a syphilitic history, in the second case the past history is not given, and the third patient is said to have had no lues. All three were well along in years with some sclerosis of the vessels and some increase of cells in the interstitial tissues. The most noteworthy lesions in each case were: in the first, an absolute break in the course of the stem of the auriculoventricular system; in the second, the slight auriculonodal junction and a sclerosis of the sinu-auricular node; in the third, an infected infarct of the ordinary ventricular musculature near the junctional tissue. The possibility of insufficient circulation and of a lesion in the ordinary ventricular musculature as agents in the production of heart-block, are suggested.

44. **Intrameningeal Treatment of Tabes and Syphilis.**—From the report of 8 cases by Boggs and Snowden it is evident that the intraspinal method is a step forward in the treatment of tabes and cerebrospinal syphilis. The patients were uniformly relieved from pain, and as far as locomotion is concerned there was a slow but definite improvement, in some instances amounting almost to restitution to normal. The psychic effect of the treatment was also marked. The patients became encouraged by the quick relief of pain and the first improvements in the control of motion and were faithful in their efforts to use the legs and practice walking, stair climbing, etc. The nutrition also rapidly improved under these stimuli. The effect of the treatment on the cerebrospinal fluid was very striking. The cell-count first fell to normal, the Wassermann reaction becoming negative some time after the cells were reduced.

45. **Pneumonia Treated with Antipneumococcus Serum.**—The serum used by Williams was taken from a horse immunized against many strains of pneumococci. Usually it was injected directly into a vein of the arm at a temperature about that of the patient. This rule was departed from and the serum was given subcutaneously to two children on account of the difficulty of entering the vein with the needle, and also when second and later doses were given to four adult patients who had received the initial dose intravenously. The first doses for adults in the earlier cases was 100 c.c. This was increased later until, in one instance, an initial dose of 300 c.c. was given. Many of the patients received more than one dose so that the total amount of serum that an individual received ranged from 50 to 750 c.c. This maximal quantity was given in six doses spread over a period of five days.

A complete demonstration of the nature of the infecting organism was not essayed. Blood-cultures, however, were made in eleven cases. Only one of them showed the pneumococcus, the others being negative. The series included twenty-three cases with sixteen recoveries and seven deaths, a mortality of 30.5 per cent. Of the seven patients who died, three were alcoholics, one of whom had suffered from two previous attacks of pneumonia, and all were very actively delirious. A fourth death was that of a baby, who, in addition to pneumonia, had multiple abscesses of the scalp, double purulent otitis media, and empyema followed by pneumothorax. The remaining three deaths seemed to have been due to the frank intensity of the pneumonia. Of the sixteen patients who recovered, eight had defervescence by crisis and eight by lysis. Five patients had complications. The series offered an opportunity to observe the effects of the administration of large and frequent doses of horse-serum that had not been refined in any manner and that contained no preservative except a trace of chloroform. Usually no immediate effects could be detected and the injection of the serum was tolerated surprisingly well. In five patients, however, symptoms appeared. The effect of the serum on the leukocytes was determined by frequent blood-counts before and after the injections. No constant effects on the white cells could be made out. Late symptoms due to the serum were noticed in eight patients. The symptoms were not usually severe.

Boston Medical and Surgical Journal

July 2, CLXXI, No. 1, pp. 1-48

46 Present Status of Treatment of Laryngeal Tuberculosis in Massachusetts State Sanatoria. A. C. Getschell, Worcester.
47 Frequency of Laryngeal Tuberculosis in Massachusetts. J. B. Hawes, 2d, Boston.
48 Two Hundred and Forty-One Cases of Laryngeal Tuberculosis Treated at Rutland State Sanatorium. J. A. Lyon, Rutland.
49 *Significance of Absence of Trypsin in Stomach in Presence of Icterus. A. E. Austin, Boston.
50 Chorio-Epithelioma. F. W. Johnson, Boston.

49. **Absence of Trypsin in Stomach in Presence of Icterus.**—The absence of trypsin in the presence of icterus according to Austin may mean conjoint cholangitis and pancreatitis,

cholangitis with mere pressure on the outlet of the pancreatic duct, pressure of the enlarged head (carcinomatous) of the pancreas on the common duct, or mere pressure of a growth originating in the ducts on the pylorus. When in conjunction with this fact there is considerable residue in the fasting stomach, it is safe to conclude that there is pyloric narrowing due probably to outside pressure, and when the rare instance of bile without trypsin is found the inference to be drawn is that pancreatitis is primary and icterus secondary, due to pressure on the choledochus.

Iowa State Medical Society Journal, Washington

June, III, No. 12, pp. 801-917

51 Education of Specialist. L. W. Dean, Iowa City.
52 Anaphylaxis. J. Auer, New York.
53 Cancer and Sarcoma of Breast. A. M. Swale, Mason City.
54 Unilateral Tuberculosis of Kidney. E. A. Jenkinson, Sioux City.
55 Osteomyelitis. S. A. Spilman, Ottumwa.
56 Fat-Constipation in Artificially Fed Infant. S. G. Hands, Davenport.
57 Arthritis Deformans. A. Oshana, Mason City.
58 Chorio-Epithelioma. Report of Case. M. Childress, Oskaloosa.
59 Anesthesia from Standpoint of Country Practitioner. J. F. Auner, Waverly.
60 Tuberculin in Treatment of Genito-Urinary Tuberculosis. L. W. Bremerman, Chicago.
61 Some Borderland Neuroses. G. Kessel, Cresco.

Kentucky Medical Journal, Bowling Green

May 15, XII, No. 10, pp. 293-328

62 Tobacco, Its Effect on Longevity. E. S. Frey, Louisville.
63 History of Typhoid Vaccination. P. S. Ganz, Louisville.
64 Surgical Treatment of Certain Acute and Chronic Diseases of Palpebral and Ocular Conjunctiva. M. F. Coomes, Louisville.
65 Acute Rheumatism. A. W. Nickell, Louisville.
66 Periosteal Sarcoma. Report of Case. G. P. Grigsby, Louisville.
67 Abscess of Liver. Report of Case. S. T. Yeatts, Louisville.
68 An Unusual Case of Pregnancy. C. E. Frey, Louisville.
69 Case of Scleroderma Circumscripta. M. L. Ravitch, Louisville.

June 1, No. 11, pp. 329-364

70 Current Medical Events. J. T. Reddick, Paducah.
71 Laboratory Methods General Practitioner Should Use. R. L. Schroeder, Owensboro.
72 Recent Methods in Hospital Anesthesia. C. N. Chipman, Washington, D. C.
73 True Physician. E. E. Bickers, Port Royal.
74 Duties of Anesthetist. E. F. Horine, Louisville.
75 Foreign Body (Steel) in Eye Ball—Method of Removal. J. H. Hester, Louisville.
76 Bronchitis. C. E. Vidt, Russell.
77 Medical Treatment of Appendicitis. A. P. Dowden, Eminence.
78 Incipient Pulmonary Tuberculosis. A. J. Bryson, Fullerton.

Lancet-Clinic, Cincinnati

June 20, CXI, No. 25, pp. 711-736

79 Sex Problems. I. O. Allen, Metamora, Ind.
80 Management of Puerperium; Chapter in Preventive Medicine. G. Gellhorn, St. Louis.
81 Present Status of Goiter. J. Y. Welborn, Evansville, Ind.

June 27, CXI, No. 26, pp. 737-764

82 Sex Problems. I. O. Allen, Metamora, Ind.
83 Puerperal Eclampsia, with Special Reference to Prevention. W. D. Porter, Cincinnati.
84 Cerebellar Surgery. S. P. Kramer, Cincinnati.

Medical Record, New York

July 4, LXXXVI, No. 1, pp. 1-48

85 Laboratory Aids in Diagnosis of Acute Mastoid Disease Due to Acute Purulent Otitis Media. G. Bacon, New York.
86 Sources of Error in Diagnosis of Pulmonary Tuberculosis. M. M. Fishberg, New York.
87 Psychologic Aspects of Relation to Divorce, Accidents, Crime, etc., Mental Defects. S. Block, Brooklyn.
88 *Cause and Prevention of Pyorrhea Alveolaris and Furunculosis. F. Tweddell, Summit, N. J.
89 Arterial Hypertension: Its Relation to Arteriosclerosis and Bright's Disease. W. C. K. Berlin, Denver.
90 Wound Healing with Aid of Vaccines. J. Gardiner, Toledo, O.

88. **Prevention of Pyorrhea Alveolaris and Furunculosis.**—Using from 30 to 60 drops of sulphuric acid, diluted in 2 to 3 ounces of water, three or four times a day, the mouth to be well rinsed immediately after, Tweddell found that the effect on boils and carbuncles in every case was astonishing, the astringent action being wonderful. Within twenty-four hours marked changes for the better were noted. Small doses are of no use, and if there is no improvement after forty-eight hours, the dose should be increased. Improvement is so rapid that it is seldom necessary to continue treatment for more than eight or ten days, usually less. The patient in most cases can himself decide when to discontinue treatment. No gastric or other symptoms were ever noticed as a result of taking this drug.

Modern Hospital, St. Louis

June, II, No. 6, pp. 331-392

91 Robert W. Long Hospital of Indianapolis. C. P. Emerson, Indianapolis.
92 Woman's Auxiliary as an Aid to Hospital Service. D. W. Graham, Chicago.
93 School at Massillon State Hospital. M. Z. Linden, Massillon, O.
94 Purchase, Preparation, and Distribution of Drugs and Medical Supplies. R. Norton, Baltimore.
95 United States Hospital Ship for Deep-Sea Fisherman. T. W. Salmon, New York.
96 Special Building for Domestic Employees. W. L. Babcock, Detroit, Mich.
97 Purchasing and Dispensing of Hospital Supplies and Drugs. E. A. Greener, Muskegon, Mich.
98 First Aid Hospitals for Industrial Plants. P. R. MacNeille, New York.
99 Items in Hospital Efficiency—Physical Therapy. J. A. Hornsby, Chicago.

New York Medical Journal

July 4, C, No. 1, pp. 1-60

100 *Treatment of Obesity. J. M. Anders, Philadelphia.
101 Treatment of Amebic Dysentery with Emetin. J. Friedenwald and L. J. Rosenthal, Baltimore.
102 Radium in Middle Ear Deafness Caused by Chonic Suppuration. W. S. Bryant, New York.
103 *Cardiac Hypochondriacs. R. H. Babcock, Chicago.
104 Control of Pulmonary Tuberculosis. T. J. Mays, Philadelphia.
105 *Sensible Diet for Average Man and Woman. E. L. Fisk, New York.
106 Cutanea Lues Insolita. W. P. Cunningham, New York.
107 Effects of Narcotic Drug Addiction. F. Kennedy, New York.
108 Commissioned Veterinary Corps for Army. G. Steele, Chicago.
109 Circumtonsillar Abscess. D. Nathan, Norristown, Pa.

100. **Treatment of Obesity.**—In the majority of cases, Anders states, obesity may be regarded as a symptom rather than a pathologic entity, being dependent on a variety of underlying affections, as previously shown, and successful treatment demands the removal of these causative states. The problem of determining the cause in special cases is an intricate one, sometimes impossible of solution because there is no sure method of getting at the facts, but in such instances time, combined with patient and painstaking observation, may reveal the dominant etiologic factors. Prophylactic measures in persons predisposed to corpulency are to be advised and encouraged. If a hereditary disposition to corpulency exists, the fat-forming (farinaceous) substances must be restricted in the dietary during childhood and adolescence. The normal amount of fat and protein, however, may be allowed in young persons who take an average amount of muscular exercise. If anemia is present, a suitable form of iron should be prescribed. During middle life a tendency toward corpulency is frequently observed, when prophylaxis must have reference to the causative factors presented by individual cases. If imprudences in eating and drinking are the besetting sins, these must be corrected. If the occupation is a sedentary one or if the individual is indolent, loving rest, and phlegmatic, then an effort to overcome physical torpor by means of suitable forms of muscular activity must be made. If a gouty or rheumatic disposition obtains, measures preventive of these conditions must be instituted.

103. **Cardiac Hypochondriacs.** — However neurotic or impressionable the cardiac hypochondriac may be, Babcock claims, the foundation of his fear was laid, not in the primary attack of palpitation or precordial pain *per se*, but in the behavior of the physician or friend who suggested the likelihood of a serious heart disorder. The doctor on being hurriedly summoned finds the individual perchance pale, with cold hands and feet, a rapid, feeble pulse and without pausing to examine the heart or ascertain the previous history, at once hastens to administer a hypodermic injection of strychnin, nitroglycerin, or morphin. He very likely shows by his face or even by some indiscret remark, that he thinks the patient in collapse and therefore in grave danger. This attitude on the part of the physician is due to the fact that he is domi-

nated by the sufferer's symptoms without stopping to consider their pathologic significance. He has been called to afford relief from what is regarded by the patient or family as a dangerous condition, and he does right to administer a hypodermic injection of morphin or strychnin at once. Nevertheless he should be on his guard not to betray by look or act any apprehension on his part as to the outcome.

In a majority of cases the subcutaneous injection of an eighth of a grain of morphin together with a two hundredth of atropin will promptly arrest the attack and reassure the patient; but an injudicious exclamation or expression as to the danger of the patient, may not only tend to counteract the effect of the remedy, but is likely to fix in the patient's mind the idea that a subsequent attack may prove fatal before help can be obtained. A reassuring word and manner often will of themselves do much to calm the individual and mitigate the severity of the symptoms. At all events it can do no good for the doctor to manifest apprehension, and besides it is likely to impair his judgment.

Very many physicians seem to view all cases of disordered heart action purely from the standpoint of the organ itself, without considering the extraneous factors serving to disturb the cardiac function. In this respect they are like those inexperienced practitioners who prescribe digitalis or some allied remedy whenever they detect a heart murmur, without pausing to consider whether or not the symptoms complained of are due to decompensation. It is this injudicious procedure on the part of the practitioner that is often responsible for the fact that many a victim of organic heart disease becomes a veritable hypochondriac in attributing to his cardiac lesion every sort of sensation or preversion of function of other organs.

It is just this unwise or overzealous behavior on the part of the general practitioner that strengthens the hands of the so-called Christian Scientist. The cardiac hypochondriac, whether having only a functional disturbance of circulation or a veritable cardiopathy is likely to be benefited by the consoling ministrations of the Christian Science healer, and Babcock states, practitioners of medicine would do well to imitate the example of these non-medical healers.

105. **Sensible Diet.**—To keep warm and give energy for work, Fisk advises to eat energy or fuel foods, potatoes, bread, cereals, corn bread, syrup and other sugars. To keep muscles and organs in repair, eat a limited and fixed amount of repair foods, meat, eggs, cheese, nuts, flesh foods, peas, beans and lentils. Do not increase the repair foods with increase in work or exposure to cold; increase the fuel foods for further energy.

Eat fruit every day. Canned fruits are good. Cooked fruit is often better than dubious fresh fruit, but some fresh fruit is essential. Eat fresh, green vegetables whenever you can get them. Thoroughly wash all raw foods. Eat some bulky vegetables of low food value, like carrots, parsnips, spinach, turnip, squash and cabbage to stimulate the bowels, and give flavor to the diet and prevent overnourishment. Eat slowly and taste your food well and it will slide down at the proper time. Do not nibble your food timorously; eat it boldly and confidently. A glass or two of water at meals is not harmful if you do not wash your food down with it. Do not let anyone bring a grouch to the dinner table; it will upset all the food values.

First, last and all the time, be moderate; avoid overnourishment and overweight. Restrict your fuel foods and burn up your own fat if you are tending toward stoutness.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June, XVIII, No. 6, pp. 281-339

110 Types and Symptoms of Goiter and Hyperthyroidism. A. G. Brenizer, Charlotte, N. C.
111 Meniere's Disease. J. M. Hutcheson, Richmond.
112 *Simple Method of Bladder Drainage. E. B. Claybrook, Cumberland, Md.

112. **Method of Bladder Drainage.**—Instead of tapping it is much simpler as far as relief goes, and safer as well, Claybrook says, to use a good trocar instead of the usual needle, and as soon as the stylet is withdrawn, feed a soft-rubber catheter through the sleeve into the bladder, and leave it in place, withdrawing the sleeve carefully over the catheter. A strip of adhesive is then given a turn around the catheter and the two free ends fastened down to the skin. There is absolutely no leakage around the catheter and when it is removed, the sinus heals in two or three days if the urethra is freely open.

Pennsylvania Medical Journal, Athens

June, XVII, No. 9, pp. 687-770

113 Surgical Treatment of Exophthalmic Goiter. D. Guthrie, Sayre.
114 *Fracture of Surgical Neck of Humerus. G. G. Ross, Philadelphia.
115 Gliosarcoma of Retina with Recurrence in Antrum of Highmore. E. Stieren, Pittsburgh.
116 *Modern Diagnosis of Tuberculosis of Kidney. B. A. Thomas, Philadelphia.
117 *Diagnostic Methods Applicable to Renal and Ureteral Lesions. G. M. Laws, Philadelphia.
118 *Results of Joint Tuberculosis in Series of Two Hundred Cases Which Have Been under Observation for Five or More Years. F. D. Dickson and D. P. Willard, Philadelphia.
119 Brill's Disease. Comparison of Four Cases with Cases of Typhus Fever Treated by Author. A. E. Roussel, Philadelphia.
120 Present Status of Insanity Problem. J. H. W. Rhein, Philadelphia.
121 Investigation of One Hundred Cases of Chorea. A. Newlin, Philadelphia.
122 Unusual Instances of Value of Serum and Vaccine Therapy. J. H. McKee, Philadelphia.

114, 116 and 117. Abstracted in The Journal, Oct. 18, 1913, p. 1484.

118. Abstracted in The Journal, Oct. 25, 1913, p. 1564.

Public Health Journal, Toronto

May, No. 5, pp. 285-358

123 Effect of Water Filtration—Biologic and Chemical. H. W. Cowan, Toronto.
124 Isolation Hospital Planning and Management. T. H. Whitelaw, Alberta.
125 Public Health in Saskatchewan. M. M. Seymour, Regina.
126 War Against Infantile Mortality. J. A. Baudouin. Lachine.
127 Problem of Alcohol. F. B. Gurd, Montreal.
128 Tuberculosis Business Proposition. A. P. Reid, Middleton.
129 Chronicles "En Route." F. Withrow.

June, No. 6, pp. 361-436

130 Transmission of Typhoid. H. W. Hill, London.
131 Sunlight in Cities. T. Brockmann, Regina.
132 Housing Problem. E. W. J. Hague, Winnipeg.
133 Economic and Racial Waste Through Insanitary Homes and Workshops. T. M. Molloy.
134 Town Planning and Its Influence on Public Health. A. L. Favell, North Battleford, Sask.
135 Veterinary Hygiene and Public Health. C. H. Higgins, Ottawa.
136 Chronicles "En Route." F. Withrow.

Surgery, Gynecology and Obstetrics, Chicago

June, XVIII, No. 6, pp. 661-784

137 *Diagnosis and Surgical Technic to Be Employed in Handling Acute Abdominal Conditions. J. Y. Brown, St. Louis.
138 *Calculous Anuria. Report of Two Cases. L. Davis, Boston.
139 Final Results (After Five Years) in One Hundred and Ninety-Two Patients Operated on for Ectopic Pregnancy. R. R. Smith, Grand Rapids, Mich.
140 *Excision of Clavicle and First Rib for Malignant Disease. R. E. Fort, Nashville, Tenn.
141 Original Surgical Uses of Bone-Graft. F. H. Albee, New York.
142 Composite or Fibro-Epithelial Tumors of Lips. W. Martin, New York.
143 *Improved Gilliam Operation for Uterine Displacements. W. Cuthbertson, Chicago.
144 *Educational Value of Cancer Statistics to Insurance Companies, Public and Medical Profession. F. L. Hoffman, Newark, N. J.
145 Death of Full-Term Fetus Due to Constriction of Umbilical Cord by Amniotic Bands: Rupture of Amnion; Hydramnois. E. Cary, Chicago.
146 *Clinical and Experimental Results of Streptococcic Infections with Special Reference to Arthritis and Its Treatment. F. G. Dyas, Chicago.
147 Roentgen Findings in Gastric and Duodenal Ulcer. J. T. Case, Battle Creek, Mich.
148 Treatment of Fractures by Medullary Bone Splints. Report of Two Cases. C. Davison, Chicago.
149 *New Self-Retaining Abdominal Retractor and Wound Protector. U. C. Bates, Seattle, Wash.
150 Present Status of Joint Diseases and Best Method of Treatment. E. G. Beck, Chicago.
151 Roentgen Findings in Normal Stomach. A. Hartung, Chicago.
152 Varicocele Operations. W. Van Hook, Chicago.
153 Clamp Intended to Facilitate Suture Anastomosis of Hollow Viscera. W. Bartlett, St. Louis.

154 Amniotic Membrane for Prevention of Postoperative Peritoneal Adhesions. C. B. Lyman and W. H. Bergtold, Denver.
155 Electric Drill, Saw, Reamer and Trephine in Bone Surgery. C. Geiger, St. Joseph, Mo.
156 Anesthesia in Surgical Research. B. F. McGrath, Rochester, Minn.
157 Pituitrin in Intestinal Paresis Following Abdominal Operations. O. H. Stanley, Concord, N. H.

137. Abstracted in THE JOURNAL, Jan. 31, p. 404.

138. **Calculous Anuria.**—Analysis by Davis of cases of calculous anuria recorded in the literature shows that at least in 90 per cent. either only one actively functionating organ existed, which was blocked, or that there was blocking of both kidneys. The few cases reported as examples of reflex inhibition of an unobstructed but more or less diseased kidney, as the result of calculous obstruction of its fellow, Davis states, are to be explained more rationally as the functional failure of an overloaded unsound organ. Convincing post-mortem and histologic evidence of reflex inhibition of a sound kidney, as the result of calculous obstruction of its fellow, is lacking. Convincing clinical and experimental evidence is likewise lacking. From a practical point of view, Davis would consider and treat calculous anuria as a purely mechanical problem. The therapeutic employment of the ureteral catheter he would restrict to a tentative use in mild cases only. He says operation should be resorted to at once in all urgent cases, the indication being to relieve obstruction, pyelotomy when practicable to be preferred to nephrotomy. Removal of the stone is an ideal to be attained whenever possible without undue prolongation of the operation. Bilateral operation is indicated whenever the kidney first cut down on seems inadequate by itself to sustain the work of elimination of the body. It naturally follows from this that the bilateral operation should be performed whenever the kidney first cut down on is apparently found unobstructed.

140. **Excision of Clavicle and First Rib for Malignant Disease.**—Fort is of the opinion that partial excision of the clavicle or first rib should not be practiced for malignant disease. The danger of local or general metastases is very great, and as division of the bone increases this hazard, excision should be made with the bone intact. Because of the favorable results obtained in the few cases of sarcomata of the clavicle and the larger number of sarcomata of the long bones, Fort states, it is advisable to use the mixed toxins of erysipelas and *Bacillus prodigiosus* for two or three months after operation. Under modern aseptic conditions the mortality for excision of the clavicle and excision of the first rib should be comparatively small, and, considering the fate of the patients who are denied surgery, the opportunity of relief by surgery is mandatory.

143. **Modified Gilliam Operation for Uterine Displacements.**—The first step of Cuthbertson's method after the usual preparation of the patient is to make a Pfannenstiel incision from one internal ring to the other, and after loosening the skin upward and downward from the subjacent fascia the abdomen is opened in the median line by as small an incision as possible through which necessary manipulations can be made. All uterine adhesions are broken up, the resulting bare spots are covered over by peritoneum, the uterus replaced in normal position, and the round ligaments on either side caught up by rubber-protected intestinal forceps. After the round ligaments are isolated, a point is selected far enough from the uterus which when the ligament is shortened will hold the uterus in its normal position. In selecting this point the size of the ligaments will have to be taken into consideration—the smaller the ligament, the nearer the uterus is the point to be selected. Through this point a catgut guy suture is passed and the round ligaments drawn through the anterior abdominal wall as in the Gilliam operation. The next step is adapted from the operation of L. L. McArthur where he uses a live aponeurotic suture in the radical cure of hernia.

The aponeurosis of the external oblique is seized with a snub-nosed forceps and with a scalpel, a strip of the aponeurosis is peeled up from just above Poupart's ligament to a point about 2 cm. above where the round ligament emerges from the muscle. Next, a sharp-pointed pair of Kocher's forceps is pushed through between the two arms of the ligament and, catching the aponeurotic strip, it is drawn down into place again and stitched there with a continuous catgut suture. Interrupted catgut sutures are placed through the round ligament and fascia to hold the ligament in its new position until the strip of aponeurosis shall have grown into place. By this means the round ligament is permanently prevented from slipping or being pulled back into the abdominal cavity, and the uterus is absolutely held in its normal position. Cuthbertson has found this operation to be exceedingly valuable in case of a cystocele accompanied by uterine prolapse. After an anterior colporrhaphy is done and the uterus is well drawn up and fixed, the cystocele does not recur.

144. Abstracted in THE JOURNAL, Dec. 6, 1913, p. 12099.

146. **Streptococcic Infections with Reference to Arthritis.**—Dyas was able to produce multiple suppurative arthritis in animals in from twenty-four to seventy-two hours, depending on the amount of strepococci injected, and this occurred regardless of whether attempts had been made to protect certain joints by injections of different solutions, or to protect the entire animal by intravenous injections of sodium salicylate. Swelling and stiffness of the larger joints were noticed after twenty-four to forty-eight hours in all cases. Post mortem, thick purulent material was found in the joints which could be scraped away leaving the synovial membrane dull and lusterless. Destruction of articular surfaces of bones, ligaments and cartilages may occur when the animals do not succumb too early to streptococcic septicemia. Cultures from the heart's blood and from the pus from joints in the animals used gave pure cultures of streptococci. The greatest pathologic changes occurred in those joints in which attempts had been made to protect them by injections of formalin or iodoform. Dyas found that intravenous or intra-articular injections of sodium salicylate in solutions as strong as 25 per cent. have no permanent effect on streptococcic arthritis; neither do intra-articular injections of solutions of formalin in glycerin or iodoform emulsion protect the joints so treated. Aspiration of the pus and injection of antiseptic solutions after infection of a joint had taken place did not give favorable results in the animals injected intravenously with streptococci.

149. **Self-Retaining Abdominal Retractor.**—This retractor consists of an oval frame 8 inches wide and 9 inches long. To this are fitted four retractor blades that work through slots in the frame. These are held in any degree of retraction desired by a ratchet device which may be released by pressing a button on each blade. These blades work through a funnel-shaped piece of rubber so that when the retractor is in place the margins of the incision, as well as the field of the abdomen covered by the rubber, are completely protected from septic material from within or without. This also obviates the use of towels applied to the margin of the skin incision.

Texas State Journal of Medicine, Fort Worth

June, X, No. 2, pp. 45-108

158 Spirit of Modern Medicine. M. L. Graves, Galveston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

June, XI, No. 126, pp. 241-288

1 Paroxysmal Tachycardia in Child Three Years of Age. R. Hutchison and J. Parkinson.
2 Food Value Required by Growing Girls, Aged Four to Fifteen. J. G. Sharp.
3 *Acute Bacillus Coli Infection of Urinary Tract in Children. D. G. Gordon.
4 Congenital Diffuse Non-Inflammatory Corneal Opacity in Two Sisters. F. Moxon.
5 Care of Cyst of Cecum in Child, Aged Three Months, Causing Intestinal Obstruction. W. G. Ball.

3. **Acute Bacillus Coli Infection.**—Examination of a series of cases treated at Paddington Green Children's Hospital, and also of those published in the recent literature on the subject, Gordon states, showed that they could be arranged in five groups according as they presented: 1. Symptoms of general feverish disorders, without any indication that one special system was affected. 2. Cerebral symptoms. 3. Pulmonary symptoms. 4. Abdominal symptoms. 5. Urinary symptoms.

British Medical Journal, London

June 20, I, No. 2790, pp. 1337-1392

6 *Murmurs of Dilated Hearts and Their Explanations. S. West.
7 Common Errors in Diagnosis and Treatment of Cardiac Diseases. F. W. Price.
8 Tincture of Digitalis (B. P.); Its Activity and Stability. W. L. Symes.
9 *Case of Acute Rheumatic Heart-Block. A. H. Gosse.
10 Influence of Total Fuel Value of Dietary on Quantity of Vitamine Required to Prevent Beriberi. W. L. Braddon and E. A. Cooper.
11 Case of Hypothyroidism in Male. I. G. Cobb.
12 Cerebral Cyst without Localizing Symptoms. A. Turnbull.
13 Case of Contraction of Upper and Lower Limbs after Still's Disease. J. C. Renton.

6. **Murmurs in Dilated Hearts.**—It is claimed by West that the ventricular dilatation murmurs are not regurgitant, but are due to eddies set up within the dilated cavities; in other words, that they are not valvular but intraventricular. They are connected with defective muscular action, but only so far as this leads to dilatation.

9. **Acute Rheumatic Heart-Block.**—The block in Gosse's cases lasted for eighteen days. Except for pyrexia there were no symptoms referable to the block, and without polygraphic records myocardial involvement could not have been diagnosed until the dropped beats occurred. Though the case was one of rheumatic heart-block, it developed apart from an attack of acute articular rheumatism. The evidence of rheumatic infection was the presence of numerous rheumatic nodules, and incidentally an attack of tonsillitis. By analogy with similar cases, acute and chronic, which have been examined histologically, it is assumed that the pathology in this case was a round-celled infiltration in the bundle of His caused by the rheumatic infection.

Glasgow Medical Journal

June, LXXXI, No. 6, pp. 401-475

14 Surgical Diagnosis in Acute Abdominal Conditions. D. Duff.
15 Pyorrhea Alveolaris and Auto-Intoxication. D. Glen.
16 Auto-Intoxication from Point of View of General Practitioner. H. A. McLean.

Journal of Laryngology, Rhinology and Otology, London

June, XXIX, No. 6, pp. 281-336

17 Acute Suppurative Otitis Media, Purulent Labyrinthitis and Leptomeningitis without Rupture of Tympanic Membrane. J. S. Fraser.
18 Rhinogenic and Otogenic Lesions of Third, Fourth, Fifth and Sixth Cranial Nerves. L. Onodi.

Journal of Pathology and Bacteriology, London

April, XVIII, No. 4, pp. 445-683

19 Bacteriology and Control of Acute Infections in Laboratory Animals. N. S. Ferry.
20 *Investigation Concerning Döhle's Leukocytic "Inclusion Bodies" in Scarlet Fever and Other Diseases. W. MacEwen.
21 *Causes of Non-Coagulability of Normal Menstrual Blood and of Pathologic Clotting. W. B. Bell.
22 Case of Puerperal Fever Associated with Enterococcus. R. Donaldson.
23 Addendum to Arsenious Jelly Method of Mounting Pathologic Specimens. S. Delépine.
24 Tumor of Pelvis Dating from Roman Times (250 A. D.) Found in Egypt. M. A. Ruffer and J. G. Willmore.
25 *Action of Asbestos Fiber on Components of Simple Hemolytic System. S. Wyard.
26 *Simple Method for Preparation of Lecithin. H. MacLean.
27 Transplantable Sarcoma Arising in Uterus of Rat. C. Singer.
28 Regulation of Blood Volume in Normal and Nephritic Animals. A. E. Boycott.
29 *Status Lymphaticus. E. Emrys-Roberts.
30 Intestinal Flora of Infants and Young Children. W. R. Logan.
31 Regulation of Blood Volume in Experimental Nephritis. R. A. Chisolm.
32 *Immunity Conferred on Mice by Radium Irradiated Mouse Carcinoma. B. H. Weld, A. C. Morson and S. Russ.
33 Description of Heat-Compensated Conductivity Salinometer. M. Coplans.
34 Continuous Type of Centrifugal Separator with Automatic Self-Cleansing Mechanism. M. Coplans.
35 Gel Filtration of Ultramicroscopic and Other Particles: Action of Asbestos. M. Coplans.
36 *Further Investigations on Strains of Tubercle Bacilli Isolated from Cases of Lupus. A. S. Griffith.

20. **Döhle's Inclusion Bodies in Scarlet Fever.**—A careful investigation of many cases and animal experiments have convinced MacEwen that the inclusion bodies are to be found in practically every case of scarlet fever during the first week of the fever. After that time they tend to disappear. MacEwen does not regard them as being of etiologic importance in scarlet fever. In scarlet fever the inclusions are large and plentiful, and are accompanied by a marked leukocytosis. The so-called *Spirochaeta scarlatina*, the author states, is not peculiar to scarlet fever, being found in other diseases, and therefore it has no claim to its title. MacEwen doubts that these thin thread-like structures are spirochetes. They are separate and distinct from inclusion bodies. Inclusions are to be found occasionally in measles, but are usually small in size and few in number. Further, the blood-picture differs markedly from that of scarlet fever, there being a leukopenia and not a leukocytosis. In diphtheria, inclusions may be present during the acute stage of the disease, but tend to disappear as the throat condition clears up and the temperature falls. In serum rashes, inclusion bodies may be present, although small in size and few in number.

Inclusions were found to be absent in 39 cases of German measles examined. This fact, coupled with the absence of leukocytosis in this condition, is a valuable aid in differentiating between German measles and scarlet fever. In typhus, erysipelas and septic conditions generally, inclusions are large in size and plentiful in number. In these conditions a marked leukocytosis was found, the general blood-picture most closely resembling that of scarlet fever. Inclusion bodies can be found in phthisis, but when present are small in size and few in number. The presence of sepsis, especially of streptococcal origin, plays an important part in the origin of inclusions. MacEwen concludes that inclusion bodies, taken along with the general blood-picture, are an aid to differential diagnosis if judiciously used, always remembering that definite sepsis will produce inclusions in the polymorph cells.

21. **Non-Coagulability of Normal Menstrual Blood.**—The investigation of the cases presented by Bell proved that the cause of the normal non-coagulability of menstrual blood is the absence of fibrin ferment, and that pathologic lesions can exist without interference with the normal function. Indeed, it seemed probable that actual lesions in the endometrium are essential for the production of the state of affairs which is responsible for the escape of fibrin ferment or its precursors in the menstrual discharge.

25. **Action of Asbestos Fiber on Hemolytic System.**—Wyard found that various kinds of asbestos fiber placed in contact with amboceptor remove it at different rates, the action of the untreated mineral fiber being most rapid. The untreated mineral removes amboceptor and complement at the same rate and with extreme rapidity, but the treated fiber removes complement at a greater rate than it removes amboceptor. Wyard concludes that asbestos fiber is a hemolytic agent. Its power is diminished by being steeped in normal saline solution, but can be restored by drying.

26. **Method for Preparation of Lecithin.**—A method is described by MacLean by which lecithin may be prepared easily and rapidly. The essential part of the method consists in the purification of the crude lecithin obtained by alcohol extraction. This is carried out by emulsification with water and treatment with acetone.

29. **Status Lymphaticus.**—Analysis of the ten cases recorded by Emrys-Roberts demonstrates—with the exception of one case, when life was cut short by fractured base following an accident—the coexistence of sudden and unexpected death from apparently trivial causes with an enlargement of the

thymus, and frequently of the systemic lymph-nodes and lymphoid follicles of the alimentary canal. Out of ten four were males and six females; their ages ranged from 6 months to 22 years. Three died while under an anesthetic; in two cases the anesthetic used was chloroform; in the third case A. C. E. mixture. In all, with the exception above noted, death was accompanied by respiratory failure. In all, with the exception of a boy suffering from Addison's disease, and to a certain extent a girl suffering from myasthenia gravis, the general condition was excellent and above the average.

32. **Immunity by Radium Irradiated Carcinoma.**—The authors confirm that mice are made immune to inoculation of carcinoma (Twort) by means of irradiated tumor cells. Prolonged irradiation of the cells abolishes this immunity-conferring power, but does not prevent an initial proliferation on their part. Some evidence is brought to show that the frequency of recurrence of this tumor after operation is diminished if the mice are reinoculated with irradiated tumor.

36. **Strains of Tubercle Bacilli from Lupus.**—With regard to the question as to whether or not tubercle bacilli become attenuated during residence in the skin tissues, it is pointed out by Griffith that in the division of bovine viruses there is no relation between the degree of attenuation and the duration of the disease. In the division of human viruses, on the other hand, there does appear to be some relation, two of three standard viruses having been obtained from cases of short duration, and the three most attenuated from cases of the longest duration; but the relation is not constant.

Lancet, London

June 20, I, No. 4738, pp. 1731-1798

37 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.
38 *Calculi in Common Bile-Duct Transduodenal and Retroduodenal Choledochotomy. H. B. Robinson.
39 Two Cases of Veronal Poisoning. M. H. Fraser.
40 Boots and Shoes from Historical and Surgical Points of View. E. M. Little.
41 Three Cases of Malignant Growth at Base of Bladder Treated by Diathermy. C. E. Iredell and R. Thompson.
42 Case of Angeioma in Cerebellar Peduncle: Fatal Intracranial Hemorrhage. C. W. Wirgman.
43 Case of Septicemic Purpura. A. W. Brodribb.
44 Three Cases of Advanced Extra-Uterine Pregnancy. R. Scheult.
45 Case of Non-Parasitic Cyst of Liver. J. Everidge.
46 Transport of Wounded in War. A. J. Hull.

38. **Calculi in Common Bile-Duct.**—In the first case described by Robinson a transduodenal opening was made and the stone removed from the ampulla of Vater by incising the mucous membrane (McBurney's operation). This is the method Robinson has used in several cases previously recorded, and, as in the later ones of the series, the duodenum was opened by a transverse incision at the level of the normal opening of the duct. In the other two cases the retroduodenal part of the duct was opened after mobilizing the duodenum. In the first of these, after making a supraduodenal opening in the ordinary way, a stone was felt fixed in the duct behind the duodenum and the scoop could not dislodge it; after mobilizing the duodenum and turning it over, the stone was easily felt in the duct, from which it was cut out from behind without any difficulty. In the second the lower part of the duct was packed with them, but a difficulty arose from the fact that there was very little interval between the junction of the hepatic and cystic ducts and the duodenum, too short a length in which to make an opening in the common duct conveniently. Accordingly, freeing the duodenum was resorted to, the bowel was pushed downward and to the left, and an opening was made in the retroduodenal part of the duct through which the stones were easily removed.

Medical Chronicle, London

June, XXVII, No. 3, pp. 145-220

47 *Anterior Lobe of Pituitary Gland. C. P. White and R. H. Titcombe.
48 Some Early Printed and Rare Books in Library of Manchester Medical Society. A. F. C. Davey.

47. **Anterior Lobe of Pituitary Gland.**—Extract of the anterior lobe of the pituitary gland, and of the dried anterior lobe itself were fed by White and Titcombe to rabbits and mice. The treatment had some effect (1) in arresting the normal increase in the proportion of fat as the animals grow; (2) in transferring some of the phosphorus from the inorganic condition to the organic (chiefly nucleoprotein); (3) in increasing the proportion of calcium salts other than calcium phosphate (presumably carbonate). In two of the treated mice the ratio of calcium to inorganic phosphorus is higher than the ratio in $Ca_3(PO_4)_2$, which is 1.93. In none of the animals, mice or rabbits is this ratio attained. In the control rabbits increase in weight was associated with an increased proportion of non-phosphorized fats and lipoids, an increased proportion of organic substances soluble in acid, and a diminution of the residue, especially of the nucleoprotein portion. The ratio of inorganic phosphorus to organic increased. In the rabbits the differences between the treated and control animals were not so marked as in the mice. The chief differences were in the proportion of acid extract and residue to the dry weight and in the proportion of phosphorus and calcium to the acid extract and the ash.

Practitioner, London

June, XCII, No. 6, pp. 745-896

49 Symptoms and Complications of Sinusitis. S. Thomson.
50 Blood-Clot Method as Applied to Mastoid Operation. A. Dighton.
51 Use of Nasopharyngoscope in Otorhinology. J. W. Wood.
52 Relation of Throat and Nose to Some Diseases Met with in General Practice. W. Wilson.
53 *Painful Affections of Shoulder. C. W. Buckley.
54 Difficulties with Which Anesthetist Has to Contend. R. W. Hornabrook.
55 *Intensive Nascent Iodin Treatment of Tuberculosis. J. F. H. Dally.
56 *Treatment of Early Tuberculosis by Intensive Nascent Iodin Administration. E. G. Reeve.
57 Work in Urinary Surgery. J. W. T. Walker.
58 Dental Work. J. G. Turner.
59 Neuroelectricity. J. H. Wilson.
60 Field for High-Frequency Treatment. T. D. Luke.
61 Treatment by General Rhythmic Faradization. I. G. Cobb.
62 Neuritis Treated by Electricity. N. Davies.
63 General Practice Treatment of Chronic Constipation by Electric Massage. H. G. Greaves.

53. **Painful Affections of Shoulder.**—The most frequent cause of pain and stiffness in the shoulder, Buckley says, is inflammation of the subacromial bursa. The characteristic feature is pain, associated with limitation of movement of a definite and peculiar type, namely, inability to abduct the arm beyond the level of the shoulder or to rotate it except to a very slight extent. The patient cannot put his hand to the back of his head nor yet to the back of his waist, and if the scapula be firmly held in position, he can only raise the arm from the side to the extent of about 10 degrees. This peculiar limitation of movement is due to the muscles, whose tendons lie in the floor of the bursa, namely, the supra- and infraspinatus, and to a less degree the teres minor. These muscles all take part in movements of rotation, while abduction is generally commenced by the supraspinatus, the deltoid coming into play after the movement has been begun. If the bursa is inflamed, any movement of these tendons will be extremely painful and will be prevented by spasm. Flexion and extension of the arm—that is, movement forward and inward, or backward and outward—will be little if at all interfered with, since the muscles performing this movement do not come into relation with the bursa.

The pain is variable in degree. In slight or chronic cases, it may be perceived when movement is attempted; while in the more severe forms, in which there is much effusion into the bursa or the surrounding structures are implicated in the inflammatory process, it may be intense even at rest, and sometimes require morphin for its relief. It is felt chiefly around the point of the shoulder, and radiates down the arm to the insertion of the deltoid, in which it is sometimes more severe than at the shoulder, and often accompanied by hyperesthesia. In severe cases it may even shoot down

to the fingers and closely simulate neuritis. It is also commonly referred to the vertebral end of the supraspinous fossa, in which hyperesthesia is sometimes found. The muscles round the shoulder-joint may be much wasted, either from disuse or from a reflex trophic effect, analogous to that seen in acute synovitis of the knee. There may in severe cases also be wasting of other muscles of the arm and edema of the hand; in such cases the diagnosis from brachial neuritis is very difficult.

In the treatment rest is of the utmost importance in the acute stages, and on the completeness of the rest the length of disability will materially depend. In severe cases the patient should be kept in bed until the more acute symptoms have subsided. The usual methods should be adopted to further the subsidence of the inflammation. When the patient gets about the arm must be supported in a sling carefully adjusted so as to take all weight off the shoulder, until all sign of inflammation, whether of bursa or nerve trunks, has disappeared and only adhesions remain to be dealt with. The arm from the beginning should be moved passively once or twice a day through the whole range of movement possible in the acute stage, and as the condition becomes more chronic the patient should be instructed to abduct the arm by placing it against a wall and gradually pushing it up to the highest point he can reach. The patient must be warned against perpetually fidgeting with the arm in what should be intervals of rest.

55. **Nascent Iodin Treatment of Tuberculosis.**—Dally's experience with the treatment of pulmonary tuberculosis by means of intensive nascent iodin leads him to the belief that, for the stratum of society from which out-patient practice is drawn, this method is of far greater and of more definite value than the common one of giving cod-liver oil and tonics, with occasional spasmodic bursts of sanatorium régime, too short, owing to the exigencies of the situation, to be of any permanent benefit except in a very limited number of cases. The fact that, in the majority of instances, the sputum rapidly shows absence of tubercle bacilli, proves of itself that on these nascent iodin has had a definite bactericidal influence. Glandular tuberculosis yields readily to this remedy. In some cases of asthma it is worth a trial, for it has the effect of causing notable diminution in the respiratory distress, as well as of preventing the paroxysmal attacks. The fetor of bronchiectasis and of chronic cavities is lessened. It is beneficial in the acute specific infections, particularly those of pneumonic and bronchopneumonic type; in skin disease, notably acne vulgaris, and in various pathologic processes.

Finally, nascent iodin has a wide scope in the amelioration of states in which the arterial blood-pressure is continuously raised. In the treatment of arteriosclerosis, Dally has found it of great service in progressively lowering the already too high maximal and minimal pressures to more normal levels, and thus in checking the further development of these insidious and harmful conditions. The special reducing agent used in this treatment in order to liberate nascent iodin from the iodid in the blood and tissues consists of chlorin in carefully prepared aqueous solution, the constituents being chlorin and some of its oxids, together with potassium chlorid. Just as iodin is held in stable solution by the iodid present in solution, so is chlorin held in like manner by the chlorid and prevented from vaporizing in excess. Through the agency of chlorin, nascent iodin is set free intensively from the iodid in the blood in proportion to the amounts of chlorin solution successively administered.

56. **Treatment of Tuberculosis by Nascent Iodin.**—Reeve has treated nearly all patients with a morning dose of 20 grains of potassium iodid, instead of 30 grains as before, and, he says, children down to 3 years of age stand this dose very well. The chlorin water has been given regularly in three doses of 1 ounce each at the ordinary times. As to the progress of cases which have apparently been cured, he has heard from two patients who stopped treatment just a year ago, both saying that they had been at work and remained quite well. From his results, Reeve thinks one is justified in giving a good prognosis in all early cases of pulmonary tuberculosis, and can expect great and lasting improvement in the advanced cases.

Annales de Médecine et Chirurgie Infantiles, Paris

June 1, No. 11, pp. 359-392

64 *Sunlight Therapy at the Seashore. E. Gaujoux.
65 Diagnosis and Puncture in Treatment of Pericarditis with Effusion. Guinon and Malarte.

64. **Heliotherapy at the Seashore.**—Gaujoux summarizes the work of the recent international congress for thalassotherapy (*thalassa,* the sea), which met in May at Cannes and devoted its sessions exclusively to the one subject, heliotherapy (*helios,* the sun). Heliotherapy has apparently definitely established the importance of conservative treatment for surgical tuberculosis, but all the work must not be left to the sun. Its action must be aided and supplemented by immobilization where needed and by opening up deep lesions so as to render them more accessible to the healing sunshine. Nearly all the specialists in heliotherapy advocated exposures of the entire body to the sunlight, whether there was merely a local lesion or not. Children seem to display a special tolerance for exposure to sunshine, but it has not yet been decided whether the conclusions based on experiences with heliotherapy of children can be applied to adults or not.

Where strict individualization is not possible, the general rule is to begin with five- or ten-minute exposures, increasing the length by a few minutes each day. The limbs are first exposed, gradually enlarging the exposure to include the chest and abdomen. The course of solar treatment should be suspended, resumed or intensified proportional to the individual response. It was said to give excellent results generally with superficial torpid lesions, in bone affections and in painful gynecologic affections. It seems to be dangerous in the hectic period and in all acute forms of pleuropulmonary tuberculosis. It is also futile when there is rapid destruction of tissue in pulmonary tuberculosis, but when the disease is in a torpid, non-febrile stage, sunlight treatment gives a very large percentage of cures. It often benefits tuberculous nephritis in an early stage and albuminuria, orthostatic or tuberculous, and thus may ward off impending disease of the kidney, of which this was the first sign. Cystitis and prostatitis also are often amenable to heliotherapy.

Archives générales de Chirurgie, Paris

May, VIII, No. 5, pp. 513-640

66 Operation on Femoral Hernia by Inguinal Route. Vautrin.
67 Interpretation of Roentgenoscopy of Head of Femur. (Radiographie des cols fémoraux normaux et pathologiques.) P. Mauclaire and Niel.

Archives des Maladies du Cœur, etc., Paris

June, VII, No. 6, pp. 369-432

68 Deformity of Aorta Causing Symptoms of Stricture. (Pseudo-rétrécissement aortique par anomalie d'origine des troncs sus-aortiques.) L. Bard.
69 Latent Aneurysm of Arch of Aorta. M. Carrieu and S. N. Oeconomos.
70 *Syphilis, Tobacco and Alcohol as Factors in Intermittent Claudication. (Syphilis et artérite oblitérante des membres inférieurs.) M. Dehon and J. Heitz.

70. **Intermittent Claudication.**—Dehon and Heitz give the details of fourteen cases of angiosclerotic dysbasia or intermittent claudication, and call attention to the fact that syphilis was known in half of them. This large percentage suggests the importance of at least tentative treatment for syphilis in all cases of obliterating arteritis in the legs. One of their patients improved remarkably under specific treatment and the Wassermann reaction became negative. Some with known syphilis had a negative reaction. In some of the known syphilitics the intermittent claudication was not benefited in the least by the specific treatment. Tobacco and alcohol were contributing factors in some of the patients, possibly outweighing in importance the syphilis in these cases. They declare that any sign of tabes or leukoplasia should call at once for specific treatment in every case of intermittent claudication, even if there is nothing else to suggest syphilis and the Wassermann proves negative at the first test.

Bulletin de l'Académie de Médecine, Paris

June 9, LXXVIII, No. 23, pp. 755-804

71 Bed for Advanced Heart Disease. P. Marie, Nachmann and P. Reynier.
72 Connective Tissue Living Twenty-Eight Months Outside of the Organism. A. Carrel and S. Pozzi.
73 Urine Tests for Cancer Unreliable. (Recherches sur les troubles des échanges chez des cancéreux. L'azote ammoniacal et l'amino-acidurie.) A. Robin.
74 Astigmatism and Military Service. F. Lagrange.
75 *Paralytic Myasthenia versus Asthenia from Adrenal Insufficiency. H. Claude.
76 *Attraction of Microbes in Air by Chilled Surfaces. (Principes d'une méthode destinée à diminuer la contagion des maladies transmissibles par l'air dans les salles de malades ou les lieux habités.) T. Trillat.

75. **Myasthenia.**—Claude emphasizes the necessity for distinguishing between asthenia of the type known as Erb's paralytic myasthenia and that resulting from defective functioning of the adrenals. The former requires organotherapy plus strychnin and phosphorus; this may yield very satisfactory results, even in severe forms of the Erb syndrome. In the adrenal insufficiency cases, he says that adrenal treatment and heart stimulants are generally all that is necessary.

76. **Microbes in the Air Attracted to Chilled Surfaces.**—Trillat has found that microbes can propagate in droplets and infect virgin droplets and increase to an actual swarm, and that these swarms or clouds of germ-containing droplets are not swept along in currents of air or drop by gravity as their sole movements. Additional to these movements they are attracted toward and cling to a chilled surface. We have to contend with microbes not only in dry dust but in the humidity in the air, and these clouds of invisible germ-laden vapor become condensed on a chilled surface. This fact might be utilized in preventing escape of germs or in protecting against them.

Journal d'Urologie, Paris

June, V, No. 6, pp. 681-839

77 *Urea Content of Blood as Basis for Prognosis in Chronic Nephritis. (Recherches sur la constante uréo-sécrétoire d'Ambard.) F. Widal, A. Weill and P. V. Radot.
78 *Traumatic Nephritis. A. Pousson.
79 *High-Frequency Current in Treatment of Bleeding Bladder Tumors. (Valeur hémostatique de l'électro-coagulation des tumeurs vésicales.) E. Desnos.
80 Movability of the Kidney in Connection with Diagnosis of Renal Calculi. Rafin and Arcelin.
81 Nephropexy. G. Marion.
82 *Tuberculosis of the Bladder. (La cystoscopie dans la tuberculose vésicale.) M. Heitz-Boyer.
83 Seventeen Prostatectomies under Exclusively Local Anesthesia. F. Legueu.

77. Practically the same article was reviewed on page 66, abstract 54.

78. **Traumatic Nephritis.**—Pousson summarizes from the literature twelve cases of nephritis developing after a trauma and adds the details of one from his own experience. In a number there was no preceding infection known or alcoholism, but there was hematuria in all but three cases, although in some it did not develop until several days after the accident. Fever may come on at once or not until several days or weeks later, after getting chilled or with an infectious sore throat. Edema may develop at once or not until months or even years later, but it is liable to affect the side corresponding to the injured kidney. In one of the cases the left arm swelled in the month after the accident to twice its size and the whole left side became dropsical. The symptoms and course of traumatic nephritis closely resemble those of Bright's disease, and the necropsy findings seem to be identical. The inflamed kidney has a pathologic action in time on its sound mate, not only by the reno-renal reflex and the injury from irritation of the nervous system of the kidneys but also by absorption of cell-toxins from the diseased kidney, and these cytotoxins seem to act first and foremost on the cells of the other kidney.

79. **Electro-Coagulation of Bladder-Tumors.**—Desnos qualifies Beer's method as a precious therapeutic resource, especially to arrest bleeding from a tumor in the bladder. The high frequency current both coagulates and cauterizes, and the hemorrhages were arrested at once in two cases he reports in which hematuria was the only symptom, and also in a third case with chronic cystitis.

82. **Cystoscopy with Vesical Tuberculosis.**—Heitz-Boyer's discussion of tuberculosis of the bladder is accompanied by twelve colored views of the typical cystoscope findings, each with a descriptive title in five languages.

Lyon Médical

May 24, XLVI, No. 21, pp. 1133-1200

84 Advantages of Treating Tumors of the Bladder by the High-Frequency, Low-Tension Current. Arcelin and Giuliani.

Presse Médicale, Paris

XXII, Nos. 46-48, pp. 437-464

85 Acidity of Urine in the Tuberculous. H. Labbé and G. Vitry.
86 Operative Transformation of Deep into Superficial Lesions as Aid to Heliotherapy in Surgical Tuberculosis. E. Grinda.
87 *To Make Scarlet Fever and Measles Mild and Non-Contagious. (Traitement préventif et curatif de la scarlatine et la rougeole par la méthode du Dr. Robert Milne.) M. N. Wilbouchewitch.
88 *Etiology of Scarlet Fever. H. Roger.
89 *Periodically Recurring Asthenia. J. Dejerine and E. Gauckler.

87. **To Render Scarlet Fever and Measles Mild and Non-Contagious.**—Wilbouchewitch remarks that Milne's method of treating these diseases ignores the official British regulations in regard to isolation and disinfection. At the first sign of trouble the child is put to bed, the throat treated with a disinfectant and the skin with eucalyptus oil, rubbed in all over the body morning and evening for four days and then once a day till the tenth day of the disease. The eucalyptus oil is not irritating, and it is not necessary to cut girls' hair. The throat is swabbed as high up and as low down as possible with 10 per cent. phenol in oil, every two hours for the first twenty-four. This need not be continued longer in scarlet fever, but in measles he repeats the swabbing three times a day for several days. To protect the environment against contagion, he suspends over the head and chest of the patient a large hoop over which is thrown a sheet of transparent cheese-cloth which falls on the bed all around and is sprinkled now and then with the eucalyptus oil.

Milne is physician to the Dr. Barnardo Homes for Boys, and by this treatment he has reduced the morbidity from acute infections to the minimum. The disease runs an exceptionally mild course, without complications on the part of nose, ears, bronchi or kidneys, and the children are well and can go back to school in ten days. The disease does not spread to those in close contact, not even to a child sleeping with the patient. The exposed are kept in an atmosphere of eucalyptus; it is sprinkled on their pillows, and ten or fifteen drops on their linen. They are kept in the house for a day or so. The scarlet-fever patient after this treatment has been applied does not contaminate his books, clothing, dishes, etc., but those he was using just before the treatment was applied must be sterilized, that is, sprinkled with eucalyptus oil and exposed to the sun for a few hours. The main point is to begin early, checking the development of the disease into a virulent type.

88. **Etiology of Scarlet Fever.**—Roger emphasizes the necessity for remembering always that the germs of scarlet fever inhabit the mouth from the very first and are extremely contagious, resistant and long lived. Desquamation spreads the disease only as the germs from the mouth get on the desquamating scales; those from the lips and hands are thus most dangerous.

He says that the disease is essentially a septicemia with a specific sore throat. The eruption is secondary and inconstant. He found a history of known contagion in only 16.8 per cent. of 2,213 cases in adults. This suggests that incomplete abortive cases in the supposedly healthy must often be responsible for the spread of the contagion. It also suggests the possibility of contagion from other beings besides man. Scarlet fever seems to be rare and mild in Japan, while frequent and grave in England. This renders the more significant the results achieved by Milne—mentioned in the preceding abstract—among the thousands of waifs in the Barnardo homes.

89. **Intermittent Physical Weakness.**—Dejerine and Gaucklers are convinced that there is a melancholia of the body as well as of the psyche. Periods return in which the slightest effort may cause fatigue or extreme asthenia. Such patients are generally classed as neurasthenics, but they are not necessarily always neurasthenic. Their recurring physical depression corresponds in general medicine to cyclic insanity in psychiatry. It is accompanied by disturbances indicating an upset in the ductless gland system, and the success of treatment aiming to remedy this confirms the correctness of this assumption as to the true nature of this intermittent asthenia. Rest and thyroid treatment proved effectual in some cases; in others hypophysis extract or both combined succeeded better. By this means he cured two patients who for years had had these attacks of asthenia which lasted two or three months, and returned two or three times a year. In five cases no benefit was apparent from the organotherapy.

Revue de Médecine, Paris

May, XXXIV, No. 5, pp. 321-392

90 Spa Treatment of Gall-Stone Colic. A. Therre.
91 Landouzy's Typhobacillosis. A. Krokiewicz.

Semaine Médicale, Paris

June 17, XXXIV, No. 24, pp. 277-288

92 Fracture of Lower End of the Radius in Children. H. Vulliet.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXXI, No. 1, pp. 1-139. Last indexed June 13, p. 1932

93 Intracellular Position of Tubercle Bacilli in the Sputum of No Import for Prognosis. (Bedeutung der intrazellulären Lage der Tuberkelbazillen im Auswurf.) M. Cohn.
94 Technic for Artificial Pneumothorax. A. Hofvendahl.
95 *Development and Number of Tubercle Bacilli in the Sputum in Connection with the Clinical Course. A. Kirchenstein.
96 Tubercle Bacilli in Blood in Guinea-Pigs. (Vorkommen von Tuberkelbazillen im strömenden Blute beim tuberkulösen und tuberkulinisierten Meerschweinchen.) Hage.
97 Skin Tuberculin Test in Prophylaxis of Tuberculosis. (Von Pirquets Probe in der praktischen Vorbeugung der Tuberkulose.) K. Isager.
98 Percutaneous Tuberculin Treatment of Tuberculosis. (Spezifische Tuberkulose-Bekämpfung im grösseren Stil.) C. Spengler and J. Petruschky.
99 *Acute Tuberculous Peritonitis; Two Cases. A. Troell.

95. **Biology of the Tubercle Bacilli.**—This communication from Spengler's private laboratory at Davos is accompanied by five large charts to illustrate the connection between the various forms of the tuberculosis virus, the resting, sporoid form, Spengler's *Splitter* and Much's granula. All the forms which take stains well are of the progressive type; the others are regressive. When the tuberculous organism becomes chilled or there is superposed infection, or it suffers in any other way, the resting sporoid forms start increased proliferation. Hence, the more stable the numbers of the resting sporoid forms, the higher the immunity. It is thus possible by charting the bacteriologic picture, especially the changes in the different forms and numbers of the bacteria, to estimate the present status and the outlook of the disease.

99. **Acute Tuberculous Peritonitis.**—Troell reports two cases of an acute peritonitis developing with a chill and other symptoms suggesting appendicitis, but the laparotomy revealed the appendix sound with acute diffuse, suppurative peritonitis, the pus quite thin and in great abundance. Tuberculosis was evident from both the microscopic findings in the first case, and was more than probable in the second as gonorrhea and pneumococcus infection could be almost positively excluded. Both patients were young men of 18, a clerk and a tailor; the former had always been healthy before; the tailor had had chronic diarrhea for a long time seven years before.

Beiträge zur klinischen Chirurgie, Tübingen

XC, No. 3, pp. 515-742. F. Trendelenburg Number

100 Congenital Megacolon. (Ueber Hirschsprung'sche Krankheit und abdomino-anale Colonresektion mittelst der Invaginationsmethode.) G. Perthes.
101 *Surgical Affections Caused by Ascarides. Schloessmann.
102 Roentgenoscopy in Surgical Stomach Disease. W. Hartert.
103 Fibrous Ostitis. H. Kolaczek.
104 Cystic Cancer of the Neck. (Branchiogenes Cystencarcinom.) H. Kolaczek.
105 Laryngocele. (Echte Kehlsackbildung.) A. Reich.
106 Snapping Shoulder. (Die schnellende Schulter.) A. Reich.
107 Rupture of Tendon of Long Head of Biceps. E. Borchers.
108 *Pseudarthrosis in Children. O. Jüngling.

101. **Surgical Affections from Ascarides.**—Schloessmann has encountered 11 cases in the last two years in which an operation was required for evil done by helminths. In 6 cases the ascarides were in the open abdominal cavity; in 3 there was ileus from obstruction by them; they had perforated the intestine in one case and in another they had caused adhesions and volvulus. In one case as the abdomen was opened the appendix was suddenly stretched out to nearly twice its length by an ascaris within. Schloessmann warns that it is safer to make no attempt to remove the helminths at the laparotomy. Repugnant as it is to leave them alive, the successful outcome in his cases confirms the wisdom of doing so and trusting to santonin to expel them later; 117 were thus voided in one of his cases and 489 in another.

108. **Pseudarthrosis in Children.**—Jüngling tabulates 139 cases and compares conditions with those in adults. His figures show that while fractures of the leg form only 8.8 per cent. of all the fractures of children, pseudarthrosis of the leg forms 76.3 per cent. of all the varieties of pseudarthrosis, and he discusses the reasons for this. The prognosis seems to be very bad as in time the atrophic ends of the fragments lose the power of regeneration. Congenital pseudarthrosis has naturally the gravest prognosis.

Berliner klinische Wochenschrift

June 15, LI, No. 24, pp. 1109-1156

109 Differentiation of Effusions and Transudate by Albumin Content. (Zur Kenntnis der durch verdünnte Essigsäure fällbaren Eiweisssubstanz in serösem Erguss.) K. Ujihara.
110 *Severe Disturbances in Vision after Atoxyl. (Sehstörungen nach Atoxyl.) R. Steinebach.
111 Vaccine Therapy of Acute Gonorrhea. (Zur Immunotherapie der akuten Blennorrhagien.) P. v. Szily.
112 The Cosmetic Field in Medicine. (Kosmetik und Anatomie.) L. Saalfeld.

110. **Blindness from Atoxyl.**—In the case reported by Steinebach a woman of 36, moderately addicted to alcohol, with an itching skin affection for five years and in the last few months increasing pallor and weakness, was given a course of atoxyl on account of her secondary anemia. She was given twelve small subcutaneous injections in the course of twenty-six days and her general condition was materially improved but she noticed that vision was somewhat impaired for nine or ten months. Then it grew rapidly worse and by the eleventh month she was almost totally blind. The findings in the eyes point unmistakably to injury from the atoxyl although only a total of 1.2 gm. had been given. The light and convergence pupil reactions are well preserved although fifteen months now have elapsed since the first signs of visual trouble were apparent. Diarrhea developed and has persisted. The smallest total dosage of atoxyl followed by blindness heretofore was 3.4 gm. in the cases on record. A predisposition seems to have been present in all the cases, cachexia from cancer or old age, auto-intoxication, chronic infections or intoxications, and especially chronic alcoholism —any of which should strictly contra-indicate the use of atoxyl.

Deutsches Archiv für Klinische Medizin, Leipzig

CXIV, Nos. 5-6, pp. 433-630. Last indexed June 6, p. 1851

113 Pain in Joints from Irritation of Spinal-Cord Segments by Visceral Disease. (Zur Frage der als Begleiterscheinung bei Leiden der Visceralorgane auftretenden Knie- und Hüftgelenkerkrankungen.) M. Lapinsky.
114 Measuring the Force of the Pulse. (Wort und Sache in der dynamischen Pulsdiagnostik.) T. Christen.
115 The Innervation of the Adrenals. O. Renner.
116 The Venous Pulse and Tricuspid Insufficiency. J. Neumann.
117 Tests of Kidney Functioning. (Das "Konzentrationsverhältnis" von Stickstoff und Chlor bei gesunden und kranken Nieren.) J. Hefter and R. Siebeck.
118 Possibility of Nourishing the Heart Muscle by Injecting Sugar Solution into the Greater Circulation. T. Büdingen.
119 Perpetual Arhythmia. B. Romeis.
120 Respiratory Quotient in Chronic Anemic Conditions. F. Relly.

Medizinische Klinik, Berlin

June 14, X, No. 24, pp. 1003-1044

121 *Calcium Salts in Therapeutics. (Kalksalze.) F. Göppert.
122 Indications for Tonsillectomy. (Ausschälung der Gaumenmandel.) E. Glas.
123 Roentgenologic Basis for Classification of Intractable Constipation. F. M. Groedel.
124 The Handwriting in Chorea. G. Lomer.
125 Treatment of Habitual Dislocation of the Patella. H. Luxembourg.
126 *Alkali in Treatment of Diabetes. G. G. Wilenko.
127 Diagnosis of Lung Tumors. D. Rothschild.
128 Diathermia. W. Laqueur.
129 The Aorta Curve. (Methode, die Pulskurve der Aorta zu bekommen.) K. Mayer.
130 Respiration Reaction to Heart Action. (Atmungsreaktionen bei gesunden und kranken Herzen.) A. Pongs.

121. **Calcium Salts in Therapeutics.**—Göppert has never witnessed any benefit from the calcium salts in acute coryza or pleurisy with effusion. Prolonged mild calcium medication seems to reduce the tendency to hay-fever; increasing the dosage during an attack has often proved effectual. Patients generally find it most convenient in the form of calcium citrate, 4 or 5 gm. a day, kept up for months. Some forms of urticaria—especially in the pregnant—are favorably influenced, but he has seen urticaria first come on while large doses of calcium were being taken. Eczema in infants was never cured with calcium in his experience and only once was marked transient improvement observed.

A tendency to asthma is often favorably influenced by calcium salts taken over a long period, as also epilepsy in connection with tetany in adults. Both theoretically and practically, calcium is indicated in latent tetany in children, the so-called spasmophilia. Fifty children in this category were thus treated with fine results; every two or three hours from 1.5 to 2 gm. of calcium chlorid (crystallisatum) is given up to a total of 8 to 14 gm. in the twenty-four hours, lengthening the intervals later until only 4 gm. is being taken; this is kept up systematically. By this means the brain is saved from the effect of the convulsions while the feeding of the child is not interfered with and it can receive adequate nourishment without bringing on the convulsions anew.

(The above doses are twice as large as the corresponding doses of the official calcium chlorid, U. S. P.)

126. **Treatment of Diabetes.**—Wilenko presents new evidence to show that glycolysis in blood and organs is hampered when the blood becomes even a trifle less alkaline than normal. Glycolysis in the test-tube is totally arrested by an increase in acidity of the medium from 1/1,000,000 to 0.2/1,000,000. The already impaired glycolysis in the diabetic suffers particularly from any change in the physiologic reaction, and recent tests of the carbon dioxid tension of the blood have confirmed the acidification of the organism in diabetes, and emphasize the necessity for restoring the balance by administration of an alkali without waiting for coma to develop. This is especially necessary on account of the acidity-promoting influence of the measures we enforce on diabetics, the preponderance of meat and the elimination of carbohydrates from the diet, all tending to increase acidity. Even when there are no signs of acetonuria, an alkali should be given when the carbon dioxid tension in the blood shows abnormal acidity. An alkali, he further insists, should be given systematically when we have to regulate the diet to exclude carbohydrates and include much meat. When this is done, acetonuria is warded off. There is nothing to show that the alkali acts on the cause of the diabetes; its effect is merely symptomatic, but as such it wards off or neutralizes acidosis with all its evil consequences. He gives no advice as to the preferable alkali or dosage.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

May, XXXIX, No. 5, pp. 597-750

131 *Significance and Treatment of Retained Pieces of Placenta. G. Winter.
132 Air Embolism with Criminal Abortion. (Luftembolie bei krimineller Abtreibung.) M. Richter.
133 Excessive Rotation of the Back as Result of Prolapse of the Arm. (Innere Ueberdrehung des Rückens infolge Armvorfalls.) E. Sachs.
134 Continuous Röntgenization for Deep Radiotherapy. (Die kontinuierliche Röntgenisation, eine neue Methode der Tiefenbestrahlung.) J. Müller.
135 *Auto-Infection in Gynecology. (Bakteriologische Untersuchungen bei gynäkologischen Erkrankungen.) W. Benthin.

131. **Retention of Scraps of Placenta.**—Winter holds that the retention of pieces of placenta never causes puerperal fever. It generally leads merely to a local metritis with destruction of the remnant of placenta. The severe cases of puerperal fever following retention are often due to the examinations for the retained fragment. Such examinations should not be made, he insists, and the uterus should not be curetted for the removal of such fragments. This is particularly dangerous when hemolytic streptococci are present. The spontaneous expulsion of the retained fragment occurs without danger. When the retention of a piece of placenta is recognized during delivery, it should be removed at once. If it is discovered during the puerperium, it should be removed at once if there is no fever or if there is severe hemorrhage even in febrile cases. If hemolytic streptococci are present, no curetting should be done until they disappear. If the peritoneum, parametrium or adnexa are diseased, conservative treatment should be the rule. Curetting should be done whenever possible with the finger and never with a sharp instrument.

135. **Auto-Infection in Gynecology.**—Benthin's conclusions are based on 500 gynecologic cases, 1910 to 1913, with operative treatment in 440. There was a mortality of 29.4 per cent. in cases where hemolytic streptococci were found in the vaginal secretion, and of only 4.2 per cent. in the cases where they were not found. By auto-infection he means simply that the infection was with germs previously present in the vagina. He believes this high mortality must be overcome by clearing the vagina from bacteria before operating, rather than by any precautions during the operation or treatment after. More attention should be devoted to the vaginal secretion than heretofore. There is no certain means of sterilizing the vagina, but he found Schweitzer's method of irrigating with 0.5 per cent. lactic acid, effective in many cases, but it failed in the two cases of carcinoma in which it was tried.

Monatsschrift für Kinderheilkunde, Leipzig

XII, No. 12, pp. 687-758

136 *Alcoholic Extracts of Vegetables in Treatment of Scorbutus. E. Freise.
137 *Spontaneous Recovery from Scrofuloderma. K. Bahr.
138 Coagulability of the Blood in the Early Weeks of Life. E. Flusser.
139 Fate of Infants with Spasm of the Pylorus and Habitual Vomiting. E. Liefmann.
140 Increased Permeability of Infant's Intestine to Foreign Albumin and Disaccharids in Digestive Disturbances. Hayashi.

136. **Alcoholic Extracts of Vegetables in the Treatment of Scorbutus.**—Freise gives the history of a severe case of Barlow's disease in a child 11 months old which was clinically cured within seven weeks by the administration of a total of 13.79 gm. of an alcoholic extract of the common beet. The extract was given in the form of an emulsion in water, 2 c.c. of the extract in 100 c.c. of water per day with a few drops of normal hydrochloric acid added. Roentgen examinations repeated periodically showed extensive repair going on in the affected bones.

137. **Spontaneous Recovery from Scrofuloderma.**—Bahr describes five cases in children under 2 years of age. In only one of these was specific treatment with tuberculin given. The others recovered spontaneously and have been free from recurrence during the year since with no signs of any other tuberculous affections. In all except one of the cases either father or mother had tuberculosis. Even though scrofuloderma is the benign form of tuberculosis, it must be disseminated from some internal focus, which has shown the same tendency to spontaneous healing as the tendency to spontaneous healing of the skin affection. This shows that scrofuloderma and probably other forms of tuberculosis during the first two years of life display a tendency to

spontaneous recovery and that their disappearance does not prove the success of any specific treatment that is being given for the tuberculosis.

Münchener medizinische Wochenschrift

June 16, LXI, No. 24, pp. 1321-1376

141 Technic for Induced Pneumothorax. F. Moritz.
142 *New Technic for Salt Solution. (Methode der schnellsten Darstellung absolut steriler Kochsalzlösungen für Injektionszwecke, speziell für Salvarsaninjektionen.) K. Taege.
143 Peptolytic Ferments Appear in Urine during Destruction of Cells on Large Scale. (Ausscheidung eines peptolytischen Fermentes im Harn bei verschiedenen Formen der Eiweisszerfallstoxikosen—Verbrühung und Hämolysinwirkung.) H. Pfeiffer. (Nachweis spezifischer peptolytischer Fermente im Harn.) W. Sagel.
144 Turbidity and Opalescence in Serum of the Pregnant and the New Born. D. Hellin.
145 Oxidase in Melanotic Large Intestine. F. Niklas.
146 *Abderhalden Reaction in Chlorosis. (Störungen der inneren Sekretion bei Chlorose.) A. Schmitt.
147 Epinephrin plus Hypophysis Extract Effectual in Tiding Sick Children through Acute Infectious Heart Weakness. P. Rohmer.
148 Salvarsan Aborts Incipient Anthrax. (Salvarsanbehandlung des Milzbrandkarbunkels.) L. Buberl.
149 *Pyelocystitis in Infants. (Infektiöse Erkrankungen der Harnorgane im Säuglingsalter.) H. L. Kowitz.
150 Present Status of Psychotherapy. v. Stauffenberg. Commenced in No. 23.
151 *Friedmann's Remedy for Tuberculosis. (Das Friedmannsche Tuberkuloseheilmittel.) Editorial.

142. **Absolutely Sterile Salt Solution from Hydrant Water.**—Taege's method is to add hydrochloric acid to ordinary hydrant water and thus sterilize it absolutely. Then he adds sodium hydroxid in the proper proportion to produce sodium chlorid in the desired percentage.

146. **Disturbances in Internal Secretions in Chlorosis.**—Schmitt regards it as significant that the serum from eighteen girls with chlorosis regularly digested ovary and uterus tissue when the dialysis test was applied and did not digest other tissues. He thinks that this establishes that there must be perverted functioning on the part of these organs, leading to the production of protective ferments. This opens a new field for research, especially with hysteria, etc.

149. **Pyelocystitis in Infants.**—Kowitz has had 17 boy babies and 23 girl babies present pyelocystitis, and in every case there was some preceding acute alimentary disturbance, and the cases nearly all developed during the heated term. This suggests that the affection is of blood-borne origin. He found the colon bacillus in pure cultures in the urine in 34 cases, associated with other bacteria in the others. Three of the infants had furunculosis or eczema, and staphylococci were found in these. No benefit was apparent from any drugs; the main reliance must be on copious intake of water, especially given by the drop method in the rectum or by subcutaneous infusion.

151. **Friedmann's Remedy for Tuberculosis.**—This editorial states that never in the history of medicine has there been such a unanimous verdict of repudiation of an alleged curative measure as is the case with Friedmann's remedy. The matter seems to have been definitely settled for the present by the open discussion through four meetings of the Berliner med. Gesellschaft and at the discussion in the Vienna K. K. Gesellschaft der Aerzte. The general verdict is that on account of the lack of any pronounced curative action from it and of the dangers connected with it, its use is warned against. The editorial concludes with the statement that as the matter seems now definitely settled, no more space will be devoted to it in future.

Therapeutische Monatshefte, Berlin

June, XXVIII, No. 6, pp. 389-468

152 *Drug Treatment of Blood-Diseases. (Fortschritte der medikamentösen Therapie bei Blutkrankheiten.) P. Morawitz.
153 Radiotherapy in Internal Medicine. (Die radioaktiven Methoden in der inneren Therapie.) E. Freund.
154 *Constitutional Factors to be Considered in Treating Tabes. (Konstitutionelle individualisierende Tabestherapie.) R. Stern.
155 *Puncture in Pericarditis with Effusion. (Zur Punktion grosser Herzbeutelergüsse.) O. Moog.
156 Personal Experiences with Small-Pox. Volland.
157 Whey-Albumin-Milk for Infants. (Quarkfettmilch—ein weiterer Ersatz der Eiweissmilch.) E. Aschenheim.
158 *The Flooding of the Drug Stores with Proprietaries. (Die Ueberfüllung der Apotheke mit Spezialitäten.) W. Heubner.
159 *The German Council on Pharmacy and Chemistry. (In eigener Sache.) W. Heubner.

152. **Drug Treatment of Blood-Diseases.**—Morawitz remarks in the course of this review of recent progress, that iron is useless as a rule in pernicious anemia. There is always abundance of iron on hand from the destruction of reds going on. It is also futile to give iron to young girls whose pallor suggests anemia but is in fact the result of nervous influences. He says of benzol that no permanent cure has yet been recorded from its use, yet it gives us another weapon against leukemia. But it must not be forgotten that it is a two-edged sword, more so, perhaps, than Roentgen treatment. The symptoms of acute leukemia subsided under thorium in a case in his own experience. The discovery that calcium renders the walls of the vessels less permeable suggests its use in hemorrhagic conditions secondary to infections, leukemia and severe anemia, but he has seen no benefit from it in tuberculous hemoptysis.

154. **Constitutional Predisposition to Tabes.**—Stern remarks that some of the symptoms in tabetics which are credited to the tabes are in reality due to constitutional inferiority in some line, and this is also the cause of the apparently casual involvement of the optic nerve, the bladder or the motor functioning in different cases. He found evidences of constitutional asthenia in nearly 50 per cent. of all his cases of tabes. These asthenic factors should be regarded in treatment, building up the patient just as we build up those with incipient tuberculosis so they can throw off the disease. Otherwise they display an ominous tendency to anemia, emaciation and wasting away. The syphilitic basis of the tabes is combated in treatment and nothing is done, as a rule, to combat the constitutional inferiority. Stern adds that a further 35 per cent. of his tabetic patients were abnormally stocky, and the elderly were inclined to obesity, the trunk uncommonly hairy—a type corresponding to deficient functioning of the thyroid. This degenerate stocky type is found more frequently among patients with general paralysis than among tabetics. It suggests a hint for treatment. He warns that iodin should not be given to this class of *breitwächsige* tabetics or paralytics. His record of 85 per cent. of either the asthenic or emphysematous type of patients in his cases of tabes has convinced him that tabes should be designated "spinal syphilis with constitutional inferiority, predominantly of the asthenic type."

155. **Puncture of Large Pericarditic Effusions.**—Moog adds another to the four cases on record (Curschmann) in which very large effusions were tapped from the rear. Moog punctured the pericardium through the fifth left interspace in front and evacuated 130 c.c. of hemorrhagic fluid; two days later 90 c.c. was evacuated in the same day. The symptoms from compression of the lung soon returned but two punctures at different points brought no fluid. Then he introduced the needle from the rear, puncturing the eighth interspace, and released 600 c.c. of the effusion and the same amount the next day, and 400 c.c. five days later. Air got in during the later maneuvers and a pneumothorax developed with some effusion in the pleura, but this gradually subsided and with it all the other symptoms to complete clinical recovery. The possibility of pneumothorax should always be borne in mind and the effect on the other lung.

158. **The Flooding of the Drug Stores with Proprietaries.**—This is the title of an article by a pharmacist, published in the *Pharm. Ztg.*, 1914, p. 306, deploring the present overproduction of pharmaceuticals, and the claims made for them in the advertising. He states that "fully 50 per cent. of the preparations advertised have no excuse for existence, and certainly not the foreign ones, but no paper or periodical can be taken up without seeing their advertisements. And the press, even every sheet of paper on which anything is printed, is looked up to by the average public as an oracle." He adds "not only in the interests of pharmacists but for the welfare of honest business, laws should be enacted to put an end to the abuses in the advertising columns of the daily papers at

least." Heubner comments on this that not merely 30 per cent. but 90 or 95 per cent. of the existing proprietaries have no justification for existence—"if thirty to fifty new ones came out every year this would amply satisfy the requirements of therapeutic progress, but now we groan under ten or twenty times this burden."

159. **The German Propaganda for Reform.**—See Propaganda Department in THE JOURNAL, June 13, 1914, p. 1910.

Wiener klinische Wochenschrift, Vienna

June 4, XXVII, No. 23, pp. 785-832

160 Experimental Syphilis in the Rabbit. L. Arzt and W. Kerl.
161 *Tendency to Hemorrhage in the Tuberculous. H. Faschinghauer.
162 *Percutaneous Tuberculin Treatment. (Tuberkulineinreibungen.) A. Kutschera.
163 Vaccine Therapy of Mixed Infection in Tuberculosis. O. Frankfurter.
164 *The Abderhalden Reaction in Differential Diagnosis. (Zur diagnostischen Verwertbarkeit des Dialysierverfahrens.) K. Csepai.

161. **Hemorrhagic Tendency in Tuberculosis.**—Faschingbauer states that among 1,261 cases of tuberculosis in the course of five years he encountered six in which there was an unmistakable hemorrhagic diathesis. He describes them in detail and bids others heed the warning that purpura for which no other cause can be discovered may be the first or among the first manifestations of latent tuberculosis. It may appear at any stage of tuberculosis and recur; it seems to accompany an acute form of tuberculosis or an acute exacerbation. It is probably due to the flooding of the organism with the toxins of the tubercle bacillus.

162. **Percutaneous Tuberculin Treatment.**—Kutschera has the patient drop the tuberculin on his skin and rub it in with his thumb until it has all disappeared. This method has proved particularly practical and effectual in some convents in his charge where 600 nuns have been taking this tuberculin treatment. It has demonstrated its usefulness in protecting against the flaring up of latent tuberculosis, but he advocates the more potent subcutaneous technic when the disease is already manifest. The percutaneous method is especially adapted for members of families exposed to tuberculosis, for large institutions, etc., as it is so simple and inexpensive that it can be applied on a wholesale scale. He begins with one drop of a 1:25 dilution of the tuberculin once a week. The dose is increased by one drop each for four weeks. When the four-drop dose has been reached he changes to a 1:5 dilution and so on, finally using one drop of pure tuberculin up to four drops. The treatment must be kept up for two years after the last manifestations have subsided. The inunction is made at a different point each time. Once a month or three months is generally often enough for medical supervision.

164. **Serodiagnosis of Pregnancy and Internal Disease.**—Csepai reports that the organs of animals elicited equally specific responses as human organs in his research on Abderhalden's ninhydrin reaction. Thymus tissue seems to be digested in nearly all affections; hence this has no diagnostic import in exophthalmic goiter, etc.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXVI, No. 1, pp. 1-320. Last indexed May 2, p. 1443

165 *Tetanoid Symptoms in the Pregnant. P. Kreiss.
166 *Loss of Blood at Gynecologic Operations, and Its Importance for Prognosis. P. Kreiss.
167 Contagious Pemphigus Neonatorum. E. Reinhardt.
168 Papilloma on Ovary. O. Hahn.
169 Bacterial Content of Urine in Pregnancy. (Keimgehalt des Urins Schwangerer.) K. Kurihara.
170 Changes in Metabolism during Pregnancy. (Eiweiss- und Mineralstoffwechseluntersuchungen bei der schwangeren Frau nebst Tierversuchen mit bes. Berücksichtigung der Funktion endokriner Drüsen.) E. Landsberg.
171 The Blood in Obstetric and Gynecologic Patients. (Eisengehalt, Hämoglobin und Blutkörperchenvolumen.) M. Maier.
172 Lipoids in Genital Organs. (Vorkommen doppeltbrechender Lipoide in menschlichen Ovarien und Uteris.) S. Adachi.
173 Calcium Content of Blood. (Kalkgehalt des menschlichen Blutes bes. beim Weibe.) N. Voorhoeve.
174 *Treatment of Third Stage of Labor. (Nachgeburtsbehandlung und manuelle Placentalösung.) F. Ahlfeld.
175 *Fixation Abscess in Treatment of Puerperal Infection. E. Santi.
176 Closing up of Botalli's Duct after Birth. G. Linzenmeier.
177 *Formation of Vagina out of Rectum. (Ersatz der fehlenden Scheide durch Implantatio recti.) P. Strassmann.

165. **Tetanoid Symptoms in the Pregnant.**—Kreiss states that he found the Chvostek sign positive and also the facial nerve abnormally irritable in 80 per cent. of 75 parturients and in 60 per cent. of 50 pregnant women. He thinks that this indicates insufficiency on the part of the parathyroid glands.

166. **Loss of Blood at Gynecologic Operations, and Its Importance for Prognosis.**—Kreiss has been impressed with the importance for the ultimate outcome of the amount of blood lost during an operation. One patient succumbed to this alone he is convinced. He now makes a point of operating on women only between two menstrual periods, ligating the vessels with scrupulous care, and being particularly cautious in drawing the bladder aside. When there has been considerable loss of blood he makes a subcutaneous injection of a grape-sugar solution to twice the amount of blood lost. He estimates the amount by Rübsamen's method and tabulates the findings, with the outcome, in forty-three abdominal and eighteen vaginal operations.

174. **Treatment of Third Stage of Labor.**—Ahlfeld compares the published statistics from a number of European maternities with the experiences at the Marburg maternity in his charge and declares that everything testifies to the advantages of expectant treatment. He reiterates that after delivery the first fifteen minutes belong to the woman alone; during the next fifteen both mother and child can be supervised. After this the mother must be inspected every five minutes and fresh linen placed under the vulva each time. The less the uterus is manipulated after expulsion of the child, the sooner and the more completely the placenta becomes detached and expelled with moderate bleeding in the true physiologic manner. Not until after an hour and a half or two hours should any attempt be made to remove the placenta which by that time should be lying low down in the vagina. Then slight pressure from without readily expels it and does no harm. With inspection every five minutes it is practically impossible for serious hemorrhage to surprise one.

175. **Fixation Abscess in Treatment of Puerperal Infection.**—Santi reports 12 cases of very severe puerperal infection in which he injected turpentine to induce aseptic suppuration and ascribes the favorable outcome in all but 2 cases to this measure. He injected from 1 to 5 c.c. and did not hesitate to repeat the injections up to three or five times. In a previous series of 18 cases he did not venture to go above 1 c.c. or repeat the injection, and he lost 6 of the patients. The reaction to the injection indicates the resisting powers of the organism and thus throws light on the prognosis. Even if it does not help, it never does harm and there are no contra-indications to the turpentine even in desperate cases, with the kidneys very pathologic; benefit follows even if it is only temporary.

177. **Formation of Vagina out of Rectum.**—This article is published in the society proceedings but it is illustrated with six colored plates showing the technic as applied in one clinical case with complete success. It is commended as exceptionally simple and easy. The abdomen is not opened, and the rectum seems to be much better suited for the purpose than any other part of the bowel. The segment of rectum resected for the new vagina starts 3 cm. above the anus. This end is sutured to the vulva. Then the upper end of the segment is cut and sutured to make the vaginal culdesac. The upper stump of the rectum is then mobilized and sutured to the anal stump and the simple operation is complete.

Zentralblatt für Chirurgie, Leipsic

June 13, XLI, No. 24, pp. 1017-1064

178 To Make New Outlet for Parotid Gland. (Ueber die Möglichkeit, der Parotis durch interglanduläre Anastomose der Parotis- und Submaxillardrüse einen kollateralen Exkretionsweg zu schaffen.) G. Ferrarini.
179 Folding Splints for the Battle Field. (Dreigeteilte Extremitäten-Transportschienen für den Krieg.) P. L. Friedrich.

Zentralblatt für Gynäkologie, Leipsic

June 13, XXXVIII, No. 24, pp. 865-896

180 The Hemolysis of Streptococci May Be a Pregnancy Reaction. (Die Hämolyse der Streptokokken eine Schwangerschaftsreaktion?) W. Benthin.
181 Cure of a Pregnancy Toxic Dermatosis by Injection of Ringer's Solution. S. F. Roos.
182 Hypophysis Extract and Atony of the Uterus. H. Oppenheimer.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 69-72, pp. 729-768

183 Echinococcus Disease of the Lungs; Five Cases. A. Chelini.
184 Traumatic Appendicitis. G. Rosica.

Riforma Medica, Naples

June 6, XXX, No. 23, pp. 617-644

185 Leukocytosis from Cold. (Sulla leucocitosi da freddo. Considerazioni e indagini sperimentali.) A. Rovighi and R. Secchi.
186 *Primary Gastric Sarcoma. G. Forni.

186. **Primary Gastric Sarcoma.**—Forni compares a case personally observed with 190 he has found on record. The majority of cases were in persons between 40 and 60 but some of the patients were over 90 and 2 were only 3. The course was longer than with gastric carcinoma. In 17 cases the tumor developed outside the stomach and 12 of the patients were cured by resection of the growth while only 3 were cured among the 20 with endogastric sarcoma given operative treatment. Among the cured cases were 10 of spindle-cell structure and 5 of round cell.

Brazil-Medico, Rio de Janeiro

May 15, XXVIII, No. 19, pp. 183-192

187 Helminth Found in Stomach of Cattle in Brazil. (Trichostrongylinae brazileiras. Haemonchus similis, n. sp.) L. Travassos.

St. Petersburger medizinische Zeitschrift

XXXIX, No. 9, pp. 111-121

188 Myoma and Corpus Carcinoma in Same Uterus. H. Jansen.
189 Double Monsters and United Twins. (Ueber Doppelmissbildungen, nebst Mitteilung über eine menschliche Doppelbildung aus der dritten Embryonalwoche.) B. Ottow.

Russky Vrach, St. Petersburg

XIII, No. 8, pp. 253-288

190 *Surgery of the Spleen. (O chirurgie selezenki.) B. K. Finkelstein.
191 Supernumerary Spleen. (O polisplenie.) A. T. Brandt.
192 *Fusiform Bacilli in Scarlet Fever. V. N. Klimenko.
193 Successful Cultivation of Tissue Cells outside the Body. M. A. Sheremetzinskaia.
194 *Azotemia in Nephritis. V. V. Ovsiannikova. Commenced in No. 1.
195 Pathogenesis of Diabetes Mellitus. A. T. Ekkert.

190. **Surgery of the Spleen.**—Finkelstein relates that he has operated on the spleen in 66 cases. The mortality with stab-wound, cancer and echinococcus cysts was 20 per cent. and with gunshot wounds 50 per cent. About 20 per cent. of his patients succumbed to their injury. A ruptured spleen must be removed without fail. Abscess of the spleen gives a good prognosis if the operation is done early, and he found the best method to be through the pleura. Operative correction of a movable spleen gave constantly good results. The outcome of splenectomy was favorable in Banti's disease, splenic anemia and in certain stages of malaria. The operation may not be advisable, however, in case of extensive adhesions and severe changes in parenchymatous organs. He adds an extensive bibliography classified according to the reasons for operative treatment.

192. **Fusiform Bacillus in Scarlet Fever.**—Klimenko found fusiform bacilli in the spleen and liver in five out of seven cadavers of children who had died from scarlet fever. In all these five patients there was a necrotic angina. The cultures were made with Schereschewsky's medium, plus half-coagulated horse-serum, kept at 37 C. for forty-eight hours; one part of serum and two parts of agar also may be used. Systematic bacteriologic examination of the throats of scarlatinal patients invariably showed the presence of fusiform bacilli, usually with other microbes, and microscopic sections from the gangrenous places also showed the fusiform bacilli and streptococci. Klimenko comes to the conclusion that gangrenous scarlatinal angina is caused by invasion of fusiform bacilli, and also by streptococci which through the lymphatic spaces and vessels penetrate into the general circulation and are the probable causes of the fatal hemorrhages occurring in scarlet fever, and of gangrene of the esophagus, otitis, abscesses and mastoiditis. The best remedy in this dangerous form seems to be neosalvarsan which he successfully used in 3 cases of scarlet fever with necrotic angina and severe general infection. The beneficial effect of neosalvarsan also speaks in favor of the rôle played by fusiform bacilli in the etiology of scarlatinal necrotic angina. The neosalvarsan was given intravenously, 0.15 c.c. to each 10 kg. of the patient's weight; three doses in five days, a total of 0.892 gm. in the one case described in detail.

194. **Azotemia in Nephritis.**—Ovsiannikova determined the nitrogen content in the blood of 57 patients with chronic nephritis during attacks of uremia or during the free intervals, but always before meals. The normal standard for residual nitrogen in the blood was assumed to be 0.33 per thousand; for urea, 0.48 to 0.5 per thousand. The patients are classed in four groups. The first group with normal rate of urea (0.5 per thousand) comprised 11 patients and 18 per cent. of them died. The second group (with 0.5 to 1 per thousand), 27 cases and 18 per cent. died. Of the 12 patients in the third group (with 1 to 2 per thousand urea), 58 per cent. died. In the fourth group of 7 patients (with from 2 to 5 per thousand urea), the mortality was 85 per cent. Thus the higher the blood content in nitrogen (urea) the graver the prognosis, 2 per cent. already indicating a severe anatomic kidney lesion. In acute nephritis, however, large quantities of urea in the blood do not have this significance and may prove innocuous.

Hospitalstidende, Copenhagen

June 10, LVII, No. 23, pp. 737-768

196 No Benefit Observed from Serum of Thyroidectomized Animals in Treatment of Exophthalmic Goiter; Eighty Cases. (Har Antithyreoidin specifik Virkning overfor Mb. Basedowii?) C. Sonne. Commenced in No. 22.
197 Dyspepsia with Chronic Alcoholism. I. F. Vogelius.

Ugeskrift for Læger, Copenhagen

May 28, LXXVI, No. 22, pp. 997-1040

198 *Connection between Alcoholism and Morbidity. (Om Forholdet mellem Alkoholisme og Sygelighed.) P. Heiberg.

198. **Connection between Alcoholism and Morbidity.**—Heiberg presents an array of tabulated statistics which demonstrate anew the waste of health and time—not to mention money—which results from drinking habits. The conditions in the large cities, small towns and in rural districts are compared especially as regards men between 35 and 55. The morbidity in this class in the cities is twice that of the rural districts, and the figures are the same as for women of the same age. Heiberg thinks that alcohol is responsible for most of this excess male morbidity in the cities. The number of days of disability on account of disease was found 50 to 100 per cent. more for the men in the cities. This he computes to represent a loss of 600,000 working days, and he presents figures to show that for one-third of this at least alcohol is responsible. It does not enter appreciably into the morbidity from acute infectious diseases, and here there is little proportional difference between the figures for the cities and the rural districts.

Upsala Läkareförenings Förhandlingar

XIX, Supplement, pp. 1-408. Last indexed May 2, p. 1444

199 *The Proportion of Lymphoid Tissue at Various Ages: Research on Rabbits. (Den lymfoida väfnadens normala mängd hos kanin olika postfetala åldrar. Bidrag till konstitutionsfrågan.) J. Hellman.

199. **The Lymphoid Tissue at Different Ages.**—This bulky number is devoted entirely to Hellman's monograph, with accompanying ten tables, a detailed summary in German, and a review of the literature on the lymphoid tissue from 1600 to date.